CALIFORNIA HIGH-SPEED TRAIN INFRASTRUCTURE

VISUAL DESIGN GUIDELINES

SAN JOSE

JANUARY 2012

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CALIFORNIA HIGH-SPEED TRAIN INFRASTRUCTURE

1/11/2012

San Jose City Hall

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Diridon Station

1.0 INTRODUCTION

1.1 PURPOSE

The California High Speed Rail Authority (CHSRA) and the City of San José (City) initiated a collaborative public outreach process to develop the *San José Visual Design Guidelines for California High-Speed Train Infrastructure* (*Guidelines*).

The purposes of the *Guidelines* are to:

- Provide aesthetic design guidance to refine engineering and address visual impacts of High-Speed Train (HST) aerial and at-grade infrastructure through the City of San José.
- Use an open, collaborative process between the CHSRA, City, and community of San José to reach a consensus on design preferences that are also technically and economically feasible given the CHSRA's engineering, operations and funding constraints.
- Provide design guidance for the next steps of project delivery
- Create rendered visualizations of HST infrastructure design solutions.
- Inform the environmental analysis in the Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the San José to Merced section.
- Identify visual design guidance for HST infrastructure that is applicable statewide.
- Produce a document that serves and informs both the general public and technical audiences.

Design of the Diridon Station and the *Diridon Station Area Plan* are separate studies from the *Guidelines*.

HST travel and infrastructure are integral to the development of the city's vision for future growth

1.2 VISION

The *Guidelines* envision high-quality aesthetic design for HST infrastructure that fits the evolving physical character and unique cultural context of San José where the people of San José feel that high-speed trains enrich life in the City. Diridon Station and the station area will shape a vibrant, world-class destination that identifies San José as the center of Silicon Valley, the technological capital of the world. HST travel and infrastructure are integral to the development of the city's vision for its future growth as a "more prominent and complete great city" as described in Envision San José 2040.

1.3 RELATIONSHIP TO HIGH-SPEED TRAIN EIR/EIS

CHSRA is currently in the process of refining design alternatives for the HST alignment through San José. These alternatives will be evaluated in the San José to Merced HST section Project Draft EIR/EIS and, at a later date, in the San Francisco to San José HST section Project Draft EIR/EIS. The Guidelines will be part of the Project Draft EIR/EIS incorporated by reference as part of the project description and/or as project mitigation.

1.4 COOPERATIVE AGREEMENT

The *Guidelines* are to be incorporated into a Cooperative Agreement between the City and CHSRA, to be approved by the City Council and CHSRA Board respectively. The Cooperative Agreement will set forth in more detail mutual commitments between the CHSRA and the City regarding cooperation, public outreach, quality of design, construction, funding, implementation, decision-making and long-term maintenance.

The Guidelines envision high-quality aesthetic design for HST infrastructure that fits the evolving physical character and unique cultural context of San José.

1.5 GUIDELINES ORGANIZATION

Section 2.0 outlines the process that led to these guidelines. Section 3.0 sets forth general design guidance for high-speed train infrastructure. Section 4.0 lays out specific guidance for the San José corridor both citywide and for specific sub-sections. Section 5.0 addresses roles and responsibilities between the CHSRA, City and others for funding, implementation and long-term maintenance.

1.6 STATEWIDE CONSISTENCY

The San Jose Visual Design Guidelines are consistent with statewide aesthetic design guidance per Technical Memorandum 200.06 Aesthetic Guidelines for Non-Station Structures.

Plaza de César Chávez

2.0 GUIDELINE DEVELOPMENT PROCESS

2.1 TECHNICAL WORKING GROUP

The City's project team was led by the City's Department of Transportation, with Office of Cultural Affairs, the Department of Public Works and with the support of engineering, architecture and planning consultants.

2.2 COMMUNITY WORKING GROUPS

The San José City Council formed two Community Working Groups (CWGs) to work in collaboration with the Technical Working Group (TWG) and inform the development of the Guidelines. Each CWG was comprised of 10 persons selected by City Council representatives along the HST corridor to represent stakeholders along the 20-mile HST corridor. CWG members consisted of neighborhood residents, business owners, and professionals to ensure the design preferences of a diverse audience were encompassed in the *Guidelines*.

2.3 GUIDELINES DEVELOPMENT PROCESS

Aesthetic design guidance is based on 15 percent preliminary engineering documents to be analyzed in separate EIR/EIS documents for the San Francisco to San José HST section and San José to Merced HST section. Aesthetic design guidance focuses on how to refine structural and architectural design without modifying the horizontal alignment and vertical profile of the alternatives that was determined during preliminary engineering.

The TWG process led the CWG process; more than a dozen planning meetings and a three-day CHSRA/City team design charrette were held. The CWG held nine public planning meetings and a community workshop over eight months to provide significant community input, per the following process graphic.

CWG	GEOGRAPHICAL LIMITS
NORTH	Greater Downtown area from Tamien Station north to Santa Clara.
SOUTH	Monterey Highway area from Tamien Station south to Morgan Hill.

2011	TECHNICAL WORKING GROUP PROCESS	COMMUNITY WORKING GROUP PROCESS
FEB	• TWG divides the City into sub-sections along the alignment, considering context and community. • TWG identifies best practice examples of HST infrastructure to share with CWG members.	• City Council Representatives select CWG members.
MAR	• TWG holds a design charrette to identify design issues, opportunities and strategies. • The TWG translates community interests into a framework of design objectives and strategies.	• CWG presents their aspirations; issues are identified and mapped along corridor; CWG initial feedback on design preferences. • CWG Meetings: March 7 (North), March 11 (South).
APRIL	• TWG identifies additional best practice HST infrastructure examples. • TWG develops design concepts of HST infrastructure design, sketches views of concepts from CWG view points.	• CWG reviews CWG selected HST examples; identifies key City viewpoints; CWG feedback on framework for the Guidelines. • CWG Meetings: April 11 (North), April 14 (South).
MAY	• TWG develops design concepts, refines sketch views and initiates visualization work. • TWG organizes and conducts CWG/public workshop.	• CWG holds a public workshop to provide feedback on framework, input on sketches of HST infrastructure concepts from several key viewpoints, and discussions on I-280 signature bridge. • CWG provides additional input to refine HST infrastructure sketches from workshop, discuss unresolved issues and the role of public art. • CWG Meetings: May 14 Workshop (North & South), May 23 (North), May 26 (South).
JUNE	• TWG drafts *Guidelines* text based on CHSRA, City and CWG input. • TWG develops visualizations and Guidelines graphics.	• CWG provides review/feedback on draft *Guidelines* text and visualizations. • CWG Meetings: June 28 (North & South).
JULY	• TWG assembles in progress Guidelines document with edited text and graphics.	• CWG reviews in-progress Guidelines document with revised text and graphics, validate CWG input. • CWG Meetings: July 18 (North & South).
AUG	• TWG refines roles and responsibilities for implementation.	• CWG reviews and comments on draft Guidelines with local community feedback.
SEP	• TWG refines roles and responsibilities and revises Guidelines per CWG comments.	• CWG input on draft Guidelines and roles and responsibilities with local community feedback.
OCT	• TWG refines roles and responsibilities, prepares for CWG meeting and related public meetings in advance of presentation to Council.	• CWG input on roles and responsibilities, prepare presentation to City Council. • CWG Meeting: October 5.

Circle of Palms

3.0 GENERAL DESIGN GUIDANCE

3.1 AESTHETICS

3.1.1 Objectives

The TWG and CWG broadly define the objectives of aesthetic design for HST infrastructure as:

1. Elegance in engineering design, which is the visual expression of efficient structural function.
2. Engineering design that is well-composed and coherent, where the parts harmoniously relate to each other and work together to create a unified whole.
3. Engineering design that fits with, and contributes to, specific physical contexts along the HST corridor.

3.1.2 Principles

Aesthetically refined design is attractive and pleasing to look at. It brings forth a feeling of balance, stability, calmness and completeness. Good aesthetic design is rooted in three core principles:

- **Proportion**: The size and shape of design elements are in scale and proportional relationship to each other and to the whole.
- **Symmetry and Balance**: The form and structure of design elements have an exact match in size and shape between two halves, parts or sides; design elements at varying scales reflect each other in proportion and shape; and/or the distribution of design elements achieve a visually balanced composition.
- **Unity**: The design looks and feels complete in a natural, identifiable and satisfying way.

3.1.3 Desired Outcomes

- HST infrastructure is aesthetically refined and functionally elegant throughout the corridor.
- HST infrastructure is integrated with urban design, contributing to the build-out of the City's *General Plan* where the HST alignment impacts streets or public and/or private property is used for right-of-way.
- HST station design advances the implementation of the *Diridon Station Area Plan*.

Two quotes informed the CWG discussion of aesthetic design:

"The visual expression of efficient structural function is a fundamental criterion of elegance in bridge design."

– Christian Menn, Bridge Engineer, winner 2010 Outstanding Structure Award

"Beauty is not simply a matter of personal opinion, dependent primarily upon the eye of the beholder. ... Beauty, is 'to fit in every sense.' In science, for example, one sees and feels the beauty of a theory only if the latter is ordered, coherent and harmonious with all parts generated naturally from simple principles, and those parts work together to form a unified, total structure."

– David Bohm, Physicist

Example of aesthetic principles of proportion, symmetry and unity of design, TGV, France

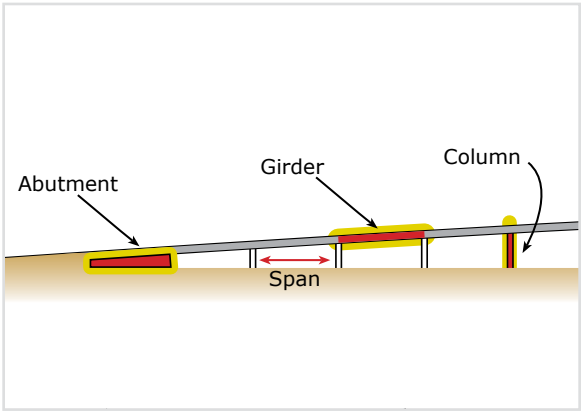


Fig. 1: Key viaduct terms

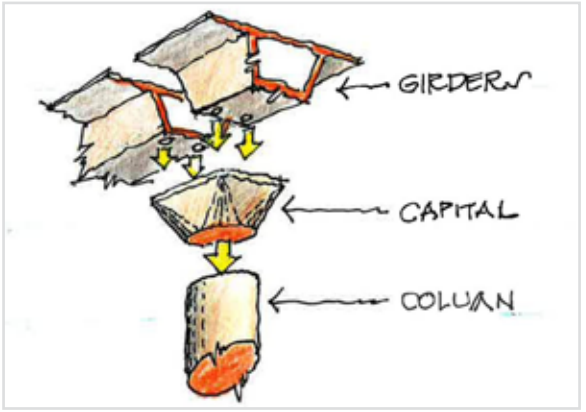


Fig. 2: Girders, capital and column

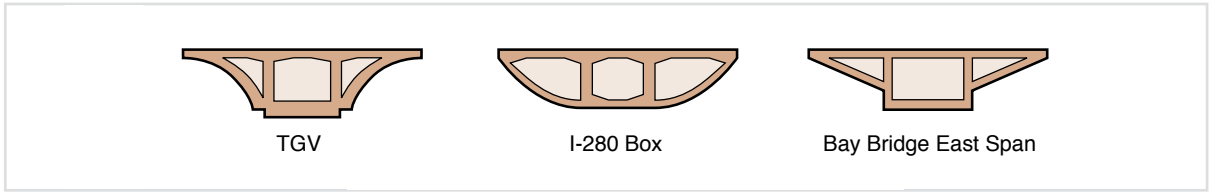


Fig. 3: Examples of unique girder shapes

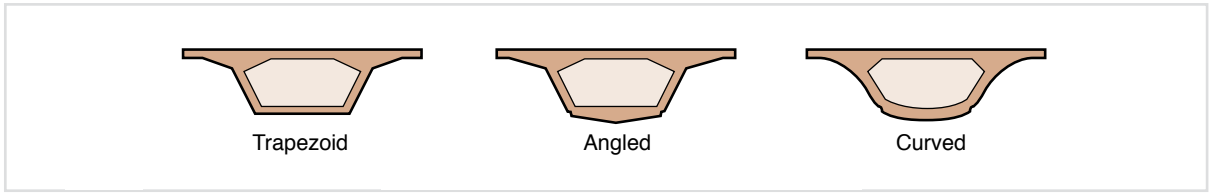


Fig. 4: Potential HST girder shapes

- HST infrastructure contributes to and enhances the existing, varied contexts along the corridor.
- The City, community members and artists are engaged with the aesthetic design of HST infrastructure at the corridor, section and neighborhood levels per implementation of the *Guidelines*.

3.2 HST INFRASTRUCTURE

The following subsections provide guidance on specific elements of HST infrastructure. Definitions are provided in *italics*. See Section 4.4 How to Apply the Guidelines for how to apply general design guidance to the San Jose corridor.

3.2.1 Viaducts

Viaducts are elevated track way with consistently spaced spans that are moderate in length. Viaducts are comprised of girders and columns with parapets, sound barriers and an overhead catenary system to deliver power. Shorter, repetitive spans (100 to 150 feet) distinguish viaducts from bridge structures with their unique design conditions and spans.

3.2.1.1 Girder Shape

A box girder is a horizontal support beam that is a hollow tube formed by enclosed walls.

- **Size.** Generally keep the width and depth of the girder cross section to a minimum. At four-track cross sections it is preferred to have daylight visible between the pair of two-track girders.
- **Shape.** A range of example, aesthetically refined, girder cross sections are shown in Figure 4. The length and shape of girders shall accommodate a range of construction methods including, but not-limited to, pre-cast single span, pre-cast segmental and cast-in-place construction. The shape of the girder box overhang has the ability to reduce the perception of a massive girder. A girder with an "angled" cross section can create

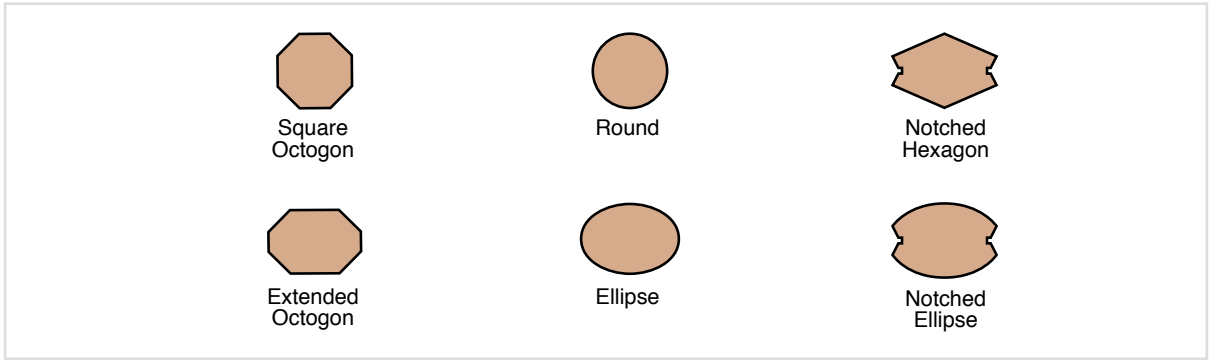


Fig. 5: Potential column cross sections

a deep shadow reducing the visual depth of the girder. A girder with a curved cross section can create a gradation in shadow and eliminate a sharp shadow line softening the appearance of the girder. For four-track viaducts minimize the use of flat bottom soffits (the underside of a structure).

- **Proportions.** Maintain consistent viaduct deck cross section as girders vary in span, depth and type (example types include pre-cast girders, pre-cast segmental, poured-in-place, haunched, balanced cantilever and other types). Utilize a reveal to visually distinguish the viaduct deck from a haunch, and to articulate a change in cross section shape.

3.2.1.2 Column and Pier Shape

A column is a slender, independent vertical support. Piers are vertical supports that are proportionally wider relative to their thickness.

- **Shape**. The perception of massive columns and piers can be minimized by the shape and taper of cross sections. Columns and piers shall be oriented so the narrower side faces the profile of the viaduct. A range of column cross section shapes are possible. Orient columns and piers so the smaller side or corner faces the viaduct to reduce apparent size through the use of shadow. Column shape can transition from the top to bottom to increase viewer perception of slenderness, such as a square column at the top to an octagonal column bottom.

- **Column capitals**. Design column capitals to express the structural connection and transition in shape from column to girder.

- **Design consistency.** Column shape is to complement a girder cross section. For curved girders use round, elliptical, or soft-edge column and pier shapes. For angled girders use octagonal, diamond, square and other rectilinear shapes. Where there are transitions in viaduct profile height, it is desirable to oversize smaller columns so they are consistent with taller columns.

Fig. 6: Round column, capital and curved girder combination

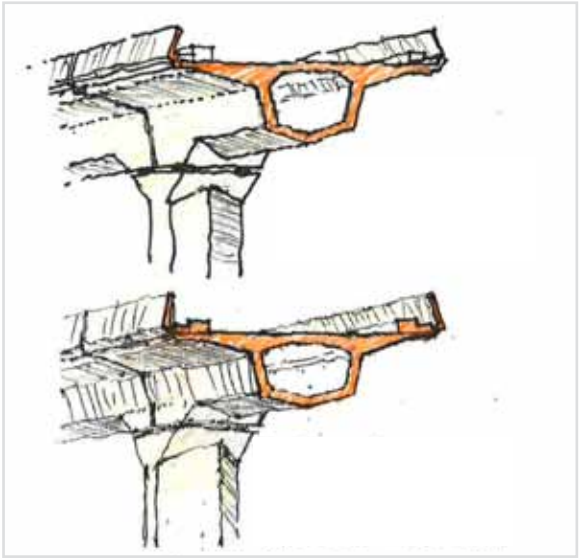


Fig. 7: Hexagonal column, capital and angled girder

Fig. 8: Octagonal column, capital and trapezoidal girder

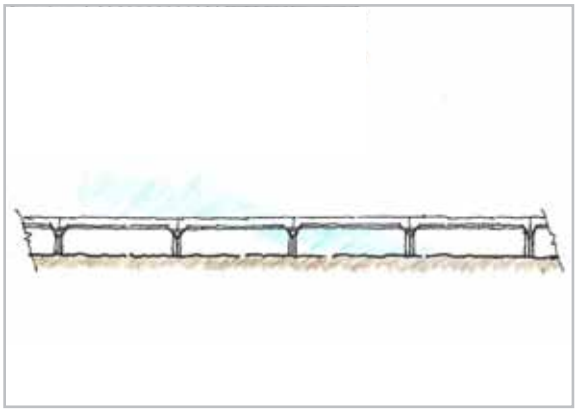


Fig 9. Typical viaduct with constant depth girder and column spacing

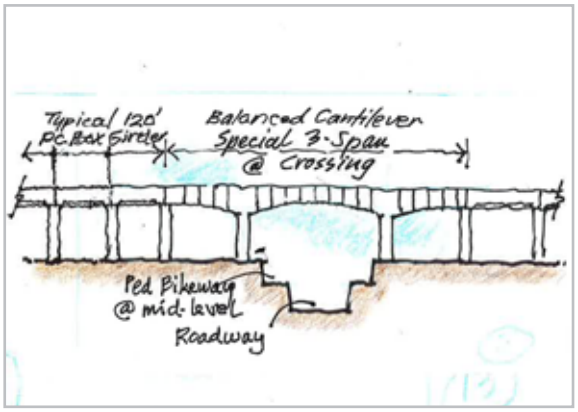


Fig. 10: Long span haunched girder at street crossing and typical viaduct with constant depth girder and column spacing

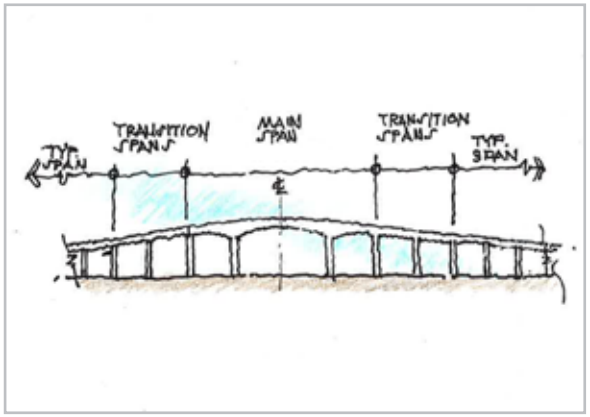


Fig. 11: Multi-span viaduct centering over urban or natural feature

SPAN LENGTH	DISTANCE	RECOMMENDED RATIO
Short Span	100' to 150'	10:1 or greater for constant-depth girder
Long Span	200' +	15:1 at the haunch 24:1 at the mid-span

3.2.1.3 Viaduct and Bridge Spans

The arrangement and spacing of spans and supporting structures is essential to the visual unity and aesthetic appeal of well-designed viaducts.

- **Structure type.** Viaduct structures shall primarily be short span girders, with use of long span viaduct structures for unique conditions per City context as described in the **Design Guidance for the San José Corridor** (4.0). Selection of long span viaduct structures shall consider aesthetics and viewpoints from pedestrian eye-level as well as views from cars, transit, and bicycles passing across and along the right-of-way.
- **Column and Span Spacing.** Spans shall have constant length and even column distribution for multi-span viaduct structures to appear consistent and unified. Column spacing and span lengths shall optimize views through the viaduct. Minimize the use of irregular spans and column spacing; irregular spans may be acceptable to optimize a specific view or minimize impacts on the ground.
- **Span Arrangement.** Where the alignment crosses over identifiable natural, topographical or urban features, arrange single or multiple spans to center over the feature. Use an odd number of spans with the greatest single span centering over the natural or urban feature. Evenly distribute columns, or use a gradient to space columns, to create a visually unified multi-span crossing.
- **Slenderness.** Slenderness enhances the visual appearance of viaducts and bridges. Use the ratio of span to girder depth per the table. Long haunches with smooth tapers visually reduce girder depth and are preferable to short, abrupt angular haunches.

Example of visual unity with consistent column spacing and girder depth

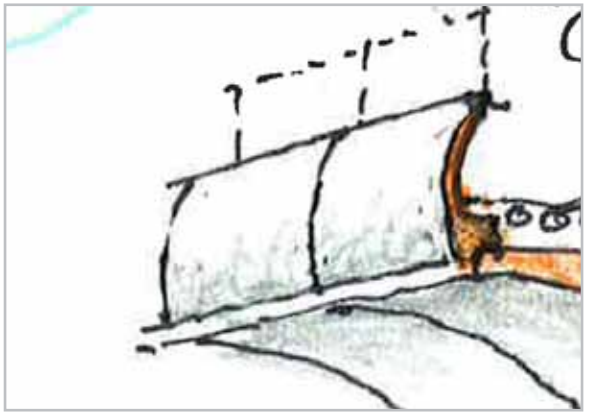


Fig. 12: Parapet for curved girder

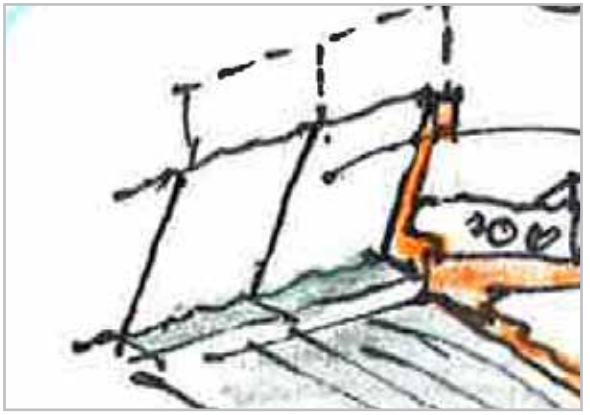


Fig. 13: Parapet for angled girder

3.2.1.4 Parapets

Parapets are low protective walls or railings at the edge of the viaduct.

- **Shape and proportion.** The parapet shape is an integral component of the viaduct. Parapets shall be in proportion to the deck overhang and girder cross section. The angle or curvature of the parapet shall be designed to reflect daylight.
- **Design continuity**. Parapets shall be continuous, expressing the horizontal line of the viaduct. The parapet can be a dominant feature viewed at a distance. Minimize visual complexity. Smoothness of the parapet shadow line will distinguish aesthetics of viaduct cross sections.

3.2.1.5 Abutments

Abutments are the retaining wall structures at the end of bridges and viaducts that support the superstructure and retain earthwork. The placement and shape of aesthetically attractive abutments have the following characteristics:

Clearance

- Locate abutments so the clearance from the bottom of the viaduct to finished grade is not less than the depth of the viaduct structure.
- Avoid dark under clearances, with security and maintenance concerns.
- Use mid-height abutments with cut slopes, or full height abutments.

Grading & Landscape

- Grade terraces on large embankments where right-of way permits, and plant street trees close to the travelway for new and rebuilt grade-separated street crossings.

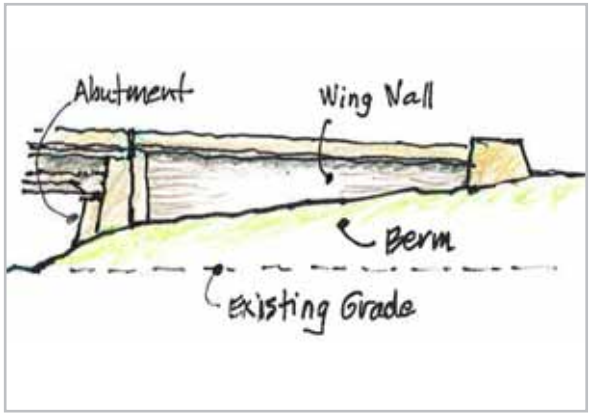


Fig. 14: Example abutment

Maintain consistent viaduct cross section along the corridor as girders vary in span, depth and construction type...

- Plant landscape along embankments and the face of the abutments to screen street crossing views of the structure.

Pedestrian and bicycle experience

- Pedestrian and bike routes can be located at the base of an abutment under the girder not less than 10 feet from the soffit. Where feasible, elevate the pedestrian and bicyclist route above the vehicle travelway to increase safety.
- Enhance pedestrian and bicyclist experience traveling under the viaduct through use of pattern and texture on abutment surfaces, lighting, and public art.
- Create visual interest by locating pedestrian and bike route openings through the abutment.

Architecture

- Design abutments to have architectural treatments that wrap around abutment. Consider architectural treatments that relate to the neighborhood context, such as use of rustication, sloped sides or pilasters.
- Design abutments symmetrically, so both ends of the bridge span have the same shape, materials and colors.
- Use mid-height or full-height abutments to frame views beyond the bridge, which is preferable to sloped grading up to the soffit. These abutment types give a solid visual appearance to how the bridge structure touches the ground and reduces the span and depth of the girder.
- Reduce the apparent mass of tall abutments with the use of berms and/or landscape at the base of the abutment. The shadow line of the parapet shall be extended over the abutment to make the bridge appear longer and thinner. Abutments shall be tapered to reduce the visual massiveness of the abutment where right-of-way permits.
- Design abutment to minimize maintenance, security and pigeon roosting.

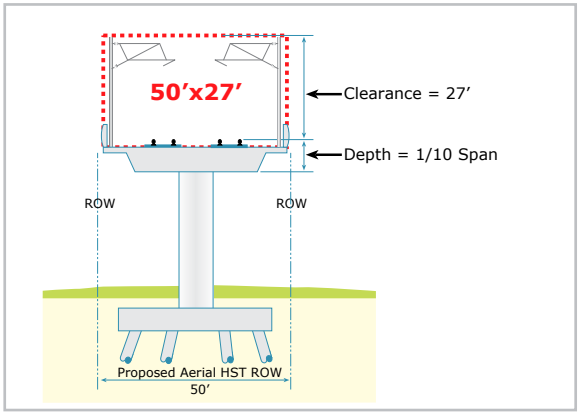


Fig. 15: Overhead catenary system, aerial structure

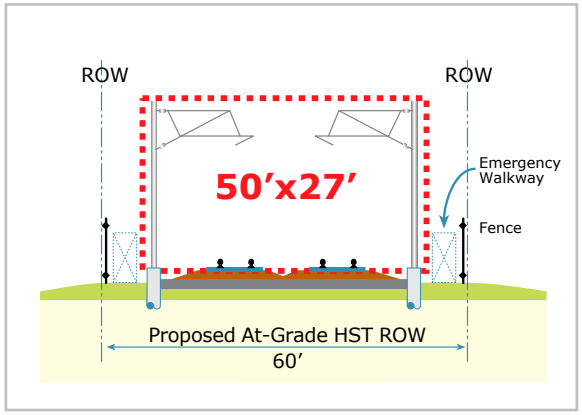


Fig. 16: Overhead catenary system, at-grade structure

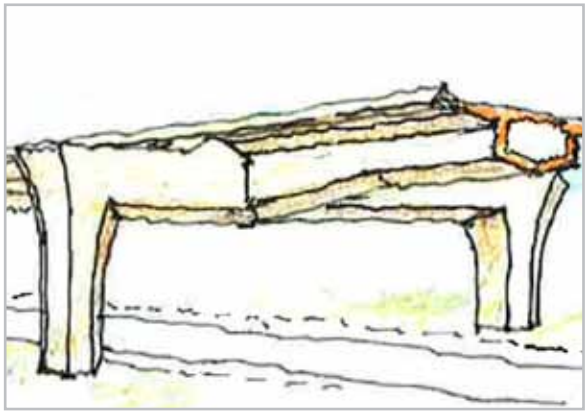


Fig. 17: Example straddle bent with cast-in-place girder

3.2.1.6 Overhead Catenary System

The overhead catenary system (OCS) is a suspended overhead steel superstructure and cables that provide continuous power to high-speed trains. The system has mandated rigid geometric standards.

- **Shape and alignment.** Aesthetic considerations include architectural shape to the OCS supports and alignment with columns and piers for visual consistency.
- **Pole location.** At station approaches, consider the location of OCS supports between the tracks to eliminate poles at the edges of the viaduct girders to reduce visibility near the viaduct and at an oblique angle to the alignment.

3.2.1.7 Straddle Bents

Straddle bents are a pair of columns carrying a beam that supports a viaduct where a column cannot be located under the guideway. Straddle bents are commonly found where a highway or road crosses under a viaduct at a highly skewed angle.

- **Minimize number.** Avoid straddle bents wherever possible. The number of straddle bents shall be minimized through horizontal alignment design and use of mid- and long-span bridge structures.
- **Architectural treatment.** Where there is no feasible and reasonable alternative to a straddle bent, provide architectural treatment consistent with viaduct cross section and pier/column profile. Where feasible, the straddle bent shall be cast-in-place in plane with the girder, to minimize profile.

3.2.2 Sound Walls

Train noise can be dampened with the use of continuous sound walls that extend up from the parapet of aerial viaducts or are free-standing walls where HSTs are at-grade. Soundwall type and location will be determined as part of the environmental review process. Where high sound walls are desired to mitigate train noise along viaducts, the design can significantly increase the visual depth of the viaduct structure.

Fig. 18: Example translucent sound wall, San Leandro

Fig. 19: Example landscaped wall, Caltrain, San Carlos

- Where walls are necessary in designated wildlife corridors, provide appropriate crossing structures.
- Design sound walls with aesthetic treatments in visually sensitive environments.
- Integrate the design of sound walls, parapet and viaduct to have a visually coherent structure.
- Integrate public art, color, landscape screening or signage to enhance the appearance of sound walls in visually significant locations.
- Where sufficient right-of-way is available, landscaped berms can be used in place of sound walls.

3.2.3 Retaining Walls

- Avoid large, stark, flat wall surfaces.
- For tall walls (greater than 10 feet), walls shall be terraced to reduce the height and landscaped to provide visual screening where right-of-way permits.

3.2.4 Materials

- Maintenance, durability and constructability are primary requirements for materials selection.
- Reinforced concrete requires no finish treatment and minimal maintenance. Integral color concrete can increase the attractiveness and compatibility of HST infrastructure. Surface treatments can be smooth or sandblasted finishes.
- Use innovative materials carefully to avoid the early obsolescence of technology.
- Steel surfaces need to be protected with high-performance coatings.

3.2.5 Finishes and Color

- Color selection significantly influences the appearance of a structure and its relationship to its surroundings. Use colors, textures, finishes and design details for HST infrastructure that are compatible with the surrounding natural and built context.

Fig. 20: Example of lighting as public art (artist Paul Tzanetopoulos)

Fig. 21: Example of light treatment

Innovative design and cutting-edge technologies shall be used to foster sustainable design...

- Natural colors reduce contrast and increase visual harmony between aerial structures and their surroundings. Shadows are visible on light colors, and are invisible on dark or dull colors. Surface articulation disappears with use of dark colors, and the structure will appear only as a silhouette. Color selection shall preserve the unity of appearance.
- Integral color concrete can increase the attractiveness and compatibility of HST infrastructure, use of warmer colors, such as Stanford sandstone for concrete structures. Reinforced concrete requires no finish treatment and minimal maintenance. Surface treatments can be smooth or sandblasted finishes.
- Use a contrasting color for painted metal adjacent to natural color concrete sparingly with exceptions for specific contexts. Steel surfaces need to be protected with high-performance coatings.
- Use of texture can improve aesthetics where publicly visible at eye level for pedestrians, bicyclists and motorists.

3.2.6 Graffiti Prevention

- Design soundwalls, retaining walls, columns, piers and abutments to discourage graffiti by ensuring public visibility and controlling access through landscape design.
- Where the potential for graffiti is unavoidable, implement an achievable graffiti mitigation plan.

3.2.7 Lighting

Design

Lighting can distinguish HST from other transportation systems adjacent to the alignment, facilitate nighttime legibility between systems, improve transit accessibility and enhance visual interest.

Fig. 22: Re-built bicycle facilities will require new lighting

Fig. 23: Example of active use under aerial structures

- Lighting shall be provided for pedestrian and bicycle safety for new and re-built pedestrian and bicycle facilities under aerial structures.
- Innovative design and cutting-edge technologies shall be used to foster sustainability and reduce energy consumption and maintenance.
- Incorporate lighting at key locations with appropriate subtly, variation, gradation, simplicity and dignity to provide identity that enhances the surrounding landscape.
- Lighting can create both visual continuity and change between environments.
- Lighting shall be used to enhance the nighttime appearance of the HST infrastructure at the Diridon Station and/or along the I-280 long span structure.

Lighting Levels

- Lighting levels shall be appropriate for the surrounding environment (e.g., residential, rural, urban/downtown) and advance environmentally responsive design.
- Lighting levels shall protect views of the night sky from Lick Observatory.
- Lighting levels during night shall be limited to what is necessary for train operations and safety.
- Use shielded outdoor lighting that directs light away from sensitive adjacent land uses such as residential neighborhoods and wildlife corridors.

3.3 URBAN DESIGN

3.3.1 CHSRA/City Process

- Use a collaborative process between the CHSRA and the City as described in Chapter 5: Roles and Responsibilities, in order to balance City requirements and preferences with what is technically and economically feasible for CHSRA engineering, operations and funding.

Fig. 24: Example of landscaping underneath aerial structures

Fig. 25: Example of artist designed mini-park

3.3.2 Column Arrangement to Support Land Use

- Arrange viaduct spans and column locations to minimize impact to public streets, right-of-way and private property.
- Orient column grid and column spacing to minimize impact on existing and/or planned land use, site circulation, structured and/or surface parking adjacent to or under the viaduct.
- Column spacing shall be consistent to create a unified and ordered design.

3.3.3 Use Under Aerial Structures

For public access and use of the lands under aerial viaducts:

- Permit locating active public uses under aerial structures. The purpose of active public use is to create safe, attractive and useable environments under aerial structures. Active public uses thrive where visible and accessible from cross streets, public spaces and pedestrian-oriented environments.
- Plan for adequate space for public use under aerial viaducts consistent with city and CHSRA requirements for safety, maintenance, access, visibility and use.

3.3.4 Remnant Parcels

- Avoid creating remnant land parcels by arranging column and support structures to allow development per city requirements. Where not feasible, then:
  - Shape remnant parcels for public uses such as mini-parks, community gardens and locating public art.
  - Locate remnant parcels where they are publicly visible and accessible.

3.3.5 Grade Separated Roads and Rebuilt Streets

For new and rebuilt grade separated roads and rebuilt streets:

- Design streets as multi-modal travelways per City General Plan designation and applicable design standards.

- Provide sidewalks of sufficient width for streets that have pedestrian movement on both sides and connect to the existing pedestrian network.
- Add bicycle lanes per the City's bicycle plan and connect them to the existing bicycle network.
- Where feasible, separate grade level of pedestrian and bicycle route from vehicle travelway, to increase safety.
- Provide street trees and landscaping per section design guidelines.

3.3.6 Street Connectivity

- Maintain street connectivity where viaduct structures or HST right-of-way impact public or private property, where feasible.

3.3.7 Pedestrian and Bicycle Access

- Maintain existing pedestrian and bicycle access across and along the right-of-way.
- Relocate or rebuild pedestrian and bicycle facilities impacted by construction. Maintain continuity of travel route.

3.4 LANDSCAPING

3.4.1 Objectives

Through use of landscaping:

- Visually integrate HST infrastructure into the varying local contexts of San José.
- Increase pedestrian safety.
- Unify appearance of the HST alignment in areas where it is visible from significant points of view.
- Reduce opportunities for graffiti.
- Support the City's Green Vision goal of planting 100,000 new trees.
- Low maintenance and environmentally appropriate.

3.4.2 General Strategies

- Use landscaping as a visible foreground to screen, soften and reduce the difference in scale between aerial HST infrastructure and the surrounding community.
- Use simple planting arrangements to create visual effects, such as featuring native wildflowers, a few dominant tree species or a predominant ground cover.
- Create pocket parks and other micro-recreational opportunities along the alignment in neighborhoods.
- Create visual effects with simple plantings such as use of native flowers, or a few dominant tree or plant species.
- Landscape plantings in urban areas can be both formal and informal. Landscape design in rural, open space and agricultural areas should reflect the natural habitat or setting.

3.4.3 Adequate Right-of-Way

- Integrate landscape design with project delivery to ensure adequate right-of-way space and land is allocated for landscape design.

Fig 26: Example of screen trees

Fig. 27: Example of street trees

...create a coherent streetscape environment with street trees...

3.4.4 *Safety*

- Utilize landscape and locate public art to reduce opportunities for anti-social behavior.
- Avoid creating spaces that are not publicly visible and provide appropriate landscaping, fencing, security and public visibility to avoid potential locations for homeless encampments along the right-of-way or under aerial structures.

3.4.5 *Prevent Graffiti*

- Landscaping shall be an anti-graffiti barrier to limit access to HST infrastructure.

3.4.6 *Landscape Screening*

Aerial viaducts can be screened from public view as follows:

- Use a row of tall, closely-spaced trees to screen public views from residential properties that back on to the alignment or from residential roads adjacent to the alignment where right-of-way permits.
- Use street trees as a foreground to visually screen views to HST infrastructure from sensitive residential neighborhoods, and pedestrian and bicycle routes that face the alignment.
- For new or re-built grade-separated streets, plant street trees on both sides of street on both approaches to the alignment and/or plant tall screen tree grove plantings along the alignment at the grade separation to screen views of the viaduct from the roadway.

3.4.7 *Berms and Transitions in Grade*

- Use terraced planting with street trees for berms and transitions in grade where visible from public streets and places, and where right-of-way permits.
- For berms without terraced planting, use context sensitive landscape options for screening such as tree grove plantings and flowering meadow plantings.

Fig. 28: Example of "green wall"

Fig. 29: Example of landscaping for storm water management

3.4.8 Sound Wall Landscaping

- Ensure adequate planting space to screen sound walls.
- Use climbing plants and living wall planting concepts where walls are publicly visible and planting space is limited. Planting needs to be durable and sufficiently dense to inhibit graffiti access.
- For walls that back on to residential use, plant the publicly visible side of the wall.

3.4.9 Landscape and Public Art

- Integrate landscape design and public art so that they work together coherently to create identity, enhance community livability and contribute to the vibrancy of the public realm.

3.4.10 General Landscape Guidelines

- **Visual Continuity.** Use similar street trees, planting materials (tree and ground cover selection, size and color) and landscape elements (such as low walls, signage, lighting) to create visual continuity for sections. For rebuilt roadways and grade separations plant street trees on both sides of the streets, with median plantings, where right-of-way permits.
- **Pedestrian and bicycle paths.** For pedestrian and bicycle trails and paths, plant trees to create shade for pedestrian and bicycle riders along paths and routes.
- **Plant palette.** Use local, native plants to the extent possible. Where compatible with existing landscape, use non-deciduous trees for HST infrastructure screening. Use drought resistant plants if natives are not available. Other plant selections should be made to minimize maintenance requirements.
- **Stormwater.** Incorporate storm water management best practices with landscape development plans.
- **Heat island.** Landscape solutions should be integral to mitigation of urban heat island effect from the concrete structures of the alignment.

- **Wildlife crossings.** Use methods defined in the environmental documents to enhance wildlife crossings such as, but not limited to: appropriate fencing, minimal lighting, native vegetation cover, noise and vibration abatement, reduced human wildlife interactions and the protection of adjoining habitats. Improve existing wildlife crossing structures such as culverts, overpasses and underpasses where impacted by the alignment.

3.5 PUBLIC ART

- **Art budget.** Develop a public art budget within HST funding that is based on national standards for public art, and expend those funds within the City according to the recommendations of this document.
- **Artist on design team.** Engage an artist as a member of the San José alignment design team early in the design/build process, as well as one as a member of the station design team, if different from the alignment design team. Design team artists will contribute to the aesthetic design of the overall system within San José, and identify locations and a clear framework for unique artwork integrations.
- **Blend of artists.** Engage local artists with the project to engender support from the local creative community, and uniquely represent the local community. Regional, national and internationally established artists should be considered to provide a dynamic blend of visual enhancements that speak to the diverse and innovative nature of San José.

Fig. 30: Example of scaled public art implementation (artists Laura Haddad & Tom Druggen)

- **Art diversity.** Consider a wide variety of art types for implementation including sound and performing artists.
- **Reflect community character.** Identify opportunities to integrate artwork into the project to enhance the livability and reflect the character of neighborhoods throughout the corridor.
- **Range of scales.** Create projects of various scales as part of the public art program for HSR including large-scale, pedestrian/bike-scale, and temporary.
- **Community participation.** Use the City's existing art commission and public art committee to inform a community process appropriate to the project scope. Particular attention and community engagement should occur where the HST alignment passes through neighborhoods, business districts and the downtown.

Fig. 31: Example of large-scale public art (artist Hector Dio Mendoza)

San Jose Center for the Performing Arts

4.0 DESIGN GUIDANCE FOR THE SAN JOSE CORRIDOR

To achieve the objectives of aesthetic design for HST infrastructure along the San José corridor, this section presents:

- Characteristics that define what is unique to San José, and how this informs aesthetic design in San José.
- Citywide aesthetic design objectives and strategies.
- Highlights of the CWG dialogue on aesthetic design.
- Defining characteristics of the corridor.
- How to apply general guidance to the corridor.
- Context-specific guidance for each section along the corridor.

4.1 DEFINING CHARACTERISTICS OF SAN JOSÈ

The following themes define the evolving physical and cultural character of San José, as identified through extensive community outreach conducted during the development of *Envision San José 2040* and independently by the CWG. Each theme is followed by a discussion of how it applies to the aesthetic design of HST infrastructure.

4.1.1 Innovation

Theme

As the largest city in Northern California and tenth largest city in the U.S., San José has been called the "Capital of Silicon Valley." San José has transformed from a small agricultural center and fruit-canning town to a growing urban center with the post-World War II housing boom followed by an aggressive evolution to a center of high-technology and entrepreneurialism. Today San José is achieving global-city status as a significant center of world economy. As the urban center of Silicon Valley, San José is nurturing itself as a green global city, a model of sustainable urban development.

Implications

The San José community values technological innovation. For structural engineering and ar-

chitecture, innovation needs to be applied with a purpose, rather than as an end in itself. Given the rapid rate technological change, San José sees the expression of technology as quickly outdated. Therefore technology shall serve as a behind-the-scenes enabler to facilitate elegance in engineering design, sustainable energy systems and the infrastructure for public art that can express the constantly changing, interactive nature of technological innovation.

4.1.2 Abundance of Nature

Theme

One of San José's most striking features is a pervasive active outdoor lifestyle, with nature highly accessible and visible throughout the City. San José has a wide range of natural systems and ways to experience those systems, including preserved open space, habitat and hillsides with wildlife present. There are established urban tree canopies in older, walkable residential neighborhoods, abundant parklands, trails, backyard gardening, pedestrian and bicycle activity, as well as traditional outdoor urban spaces such as plazas and cafes.

Implications

For HST infrastructure design, the San José community values the accessibility and visibility of nature. Setbacks and use of HST right-of-way for urban design and landscape design in urban areas is highly desirable as well as:

- Planting consistent with existing landscape environment
- Extensions to the urban tree canopy
- Use of the space under aerial viaducts for pedestrian and bicycle trails
- Public spaces that support active land uses
- Landscape screening with native, drought tolerant plantings

4.1.3 Home to a Diverse and Thriving Population

Theme

San José is defined by the diversity, high education and achievement of its cosmopolitan population.

San José is one of the most international cities in America. Building on its strong Spanish and Mexican cultural heritage, San José has become home to the largest populations of Chinese, Vietnamese and Indian residents within the Bay Area. Closely linked to San José's diversity is the emphasis the City and its residents give to the achievement of social equity within the community.

Implications

The diversity of the San José community shall be respected through local community participation in HST infrastructure design. Community engagement on street connectivity, sound and retaining walls design, grading, public art and other areas where HST infrastructure touches communities will express local values.

4.1.4 Urban Planning Concepts

Theme

San José is also defined by its commitment to best practices in urban planning with its growth toward becoming a more prominent and complete great city. *Envision San José 2040* identifies the following ten over-arching ideas that advance the city's vision for the physical development:

- **Community based-planning.** Engage extensive and meaningful community and stakeholder input.
- **Regional employment center.** Shift focus of the City's growth to support San José as regional employment center.
- **Fiscally strong city.** Establish balance of fiscal costs and revenues to deliver high-quality services consistent with community expectations.
- **Focused growth.** Enable economic growth, fiscal sustainability, environmental stewardship and support new attractive urban neighborhoods.
- **Urban villages, corridors and regional transit hubs.** Create walkable, bicycle friendly, transit-oriented mixed-use urban settings for new housing and job growth.

Functional Infrastructure:
Functional HST infrastructure components satisfy the overarching goals of design excellence while recognizing the importance of local context. For example, a functional station will be enclosed in a unique but architecturally reserved skin.

Iconic Station:
Local jurisdictions that prefer a HST station to make a more dynamic and impactful "architectural statement" than a functional station may choose to partner with the Authority in developing "iconic" station architecture.

Signature Bridge:
HST bridge infrastructure that makes a more dynamic and impactful "architectural statement" than that made by functional infrastructure.

- **Complete streets, grand boulevards, and main streets.** Design streets for people, rather than autos. Connect neighborhoods together, and shape pedestrian-oriented streets as destinations for neighborhood activity.
- **Destination downtown.** Support downtown growth as the City's vibrant, urban, cultural, arts, entertainment, culinary and sports center, with distinctive work environments and unique high-rise residential living.
- **Greenline/urban growth boundary.** Define limits of the city's urbanized area and preserve the surrounding hillsides as open space.
- **Environmental stewardship.** Advance the city's green vision and sustainability measures to reduce greenhouse gases.
- **Design for healthy communities.** Support physical health of the San José community by promoting walking, biking, recreation and access to healthy foods, healthcare and safety services.

Implications

These concepts are to be applied on how to integrate HST infrastructure design with the local context. For example, north of Diridon station, where the alignment crosses over private property, the City wants to focus growth on regional employment, so the aerial viaduct and supporting columns need to be designed to support the land uses envisioned in the Diridon Station Area Plan.

4.1.5 CWG Discussion on San José HST Aesthetic Design Criteria

The Community Working Group (CWG) envisions the HST system as a legacy project for the City, with potential to realize unprecedented contributions to the character and livability of the City. Key points of the CWG discussion on aesthetic design are as follows:

- **"Golden thread."** The visual design guidelines are to define what the acceptable "golden thread" elements are for San José. The HST system should be characterized as a "golden thread" with aesthetics that distinguish the HST system from statewide highway infrastructure. The HST system connects the diversity of California communities together. The success of the "golden thread" will be how it weaves through the physical and cultural fabric of San José communities and touches the people who live, work and visit San José.
- **HST experience.** The guidelines must foster the experience of HST trains and HST infrastructure as an attractive asset contributing to the quality of life and identity of the City from both near and distant points of view.
- **High-quality design for Diridon Station area.** An aerial alignment through San José's downtown should be well designed and of high quality to advance San José as the creative and cultural center of Silicon Valley. The guidelines are to support the City's creation of a world-class visual environment for the Diridon Station through high quality architecture, public art and urban design. The design of the HST infrastructure shall

Example Structural Concept: I-280 crossing with haunched girder viaduct

Example Structural Concept: I-280 crossing with transverse arches

What Makes a Bridge Iconic?

Excerpts from the Transportation Research Board (TRB) Bridge Aesthetics Subcommittee, a non-affiliated group of advisors whose research and aesthetic design guidelines educate the profession on how to improve the appearance of bridges.

Few creations of man define a place, an era, and a people like an iconic bridge. Bridges are designed to provide access from one side of a separation to the other in a safe, functional, economic, and aesthetically pleasing manner; icon bridges, however, serve an even greater function. They become an integral part of the identity of a place and its people, and they, in fact, help to shape that identity.

What makes a bridge iconic? Are there any defining characteristics that allow us to label a bridge as iconic?

Based on responses to a survey about iconic bridges, as well as information garnered from bridge engineering references, the following are some of the defining characteristics of iconic bridges. Although an iconic bridge may not necessarily possess all of these characteristics, it can be judged based on the number and the extent of these qualities that it possesses.

1. Size. Iconic bridges are often characterized by massive size, stretching the limits of man's ingenuity and resources. Whether they possess longer spans, taller towers, or higher superstructures, iconic bridges often exceed the scale of previous similar structures.

2. Innovation. Iconic bridges are generally ahead of their time. They provide unique and creative solutions to crossings that may have seemed impossible. They are original, not merely a copy of another bridge. They may push or break the limits of engineering knowledge for the era in which they were built. In addition, they are

Continued on next page

integrate with the development of the surrounding station area.

- **I-280 bridge.** The CWG opinions diverged regarding the design of a signature bridge structure crossing I-280. Everyone agreed that a bridge structure shall complement and not compete with views of the downtown skyline and surrounding mountains. Opinions varied regarding the merits of a signature structure. One group felt the I-280 crossing should be simple and sleek, whereas the other group considered the proposed transverse arches for a long span bridge structure as a "place-holder" for a future design that can reflect Silicon Valley's spirit of innovation. All agreed that a bridge structure needs to relate to the design of Diridon Station. Large-scale public art that is changeable and interactive can contribute to how people can experience the bridge by driving through it, or walking to where it can be seen from the downtown or surrounding neighborhoods.

- **Preserve neighborhood scale and character.** HST infrastructure needs to relate to human experience, as viewed from pedestrian eye level, in context, and in relationship to the scale and character of neighborhoods. HST infrastructure shall be well maintained, and designed to minimize graffiti. Urban design should connect neighborhoods together through multi-modal street design, public art and landscaping where people cross the HST alignment. The guidelines are to protect distant views to the downtown skyline and mountains as well as eliminate or redesign unattractive structures such as straddle bents.

- **Redesign Monterey Highway.** Transform Monterey Highway into Monterey Parkway with reducing the width of Monterey Highway for right-of-way for the HST project. The guidelines are to identify how to reduce the social barriers of the existing highway and enhance Monterey Highway to be an attractive, multimodal street that connects the residential and commercial it serves together. East-west crossings need improvement for young people to travel between home, school and parks. Sound walls and retaining walls shall have careful design treatment.

- **Protect scenic Coyote Valley.** Coyote Valley is the southern gateway to the Bay Area; it is a scenic resource to be protected and enjoyed by everyone, including rail passengers. The guidelines need to ensure that HST infrastructure will complement, and not detract from, the scenic and aesthetic quality of the open space. Wildlife crossings are essential and must be designed following robust scientific wildlife corridor design principles. The guidelines need to highlight the historic and agricultural context of Monterey Highway.

- **Engage artists.** Public art and artist participation are to be integral to the design of HST infrastructure, especially where pedestrians and bicyclists experience the project at neighborhoods along the corridor. Local artists are to participate, especially where the HST system connects to neighborhoods. There is an opportunity to celebrate the history of the people and places, "where they have been and where they are going." There should be a mix of small and large works at alignment crossings, Diridon Station, I-280 and other loca-

Example Structural Concepts: I-280 transverse arches at night

tions. Larger elements can provide an ongoing sense of change (i.e. through movement, light or interactivity). Technology can be used and referred to, but given how quickly technology is updated, shall not be the primary feature.

- **Effective implementation with community participation.** The guidelines are to have a clear and effective implementation plan that involves the community in decision-making. The size and scale of the project necessitates foresight and guidelines that describe how to design the HST system in San José to create excellence in engineering design that meets the City's quality of life, aesthetics and design preferences.

4.2 CITYWIDE OBJECTIVES & STRATEGIES

This section describes citywide objectives and strategies to shape the aesthetic design of HST infrastructure to fit the San José context.

4.2.1 Achieve Aesthetic Design Excellence for HST Infrastructure

Objective

a) Design HST aerial structures and supporting infrastructure to be aesthetically refined, well proportioned and "functionally elegant."

What Makes a Bridge Iconic? (Continued)

often constructed using advanced materials and techniques.

3. Beauty. Iconic bridges are beautiful to behold. Whether through their form, their color, or their lines, an iconic bridge creates a lasting impression. Iconic bridges are among the most photographed objects in the world and are often featured on postcards and calendars.

4. Location and surroundings. Iconic bridges appear to have been custom-made for their surroundings. They are often graced with beautiful settings and are often located along the mainstreams of society. Iconic bridges are harmonious and complementary to their surroundings; they are ideally-suited for their location.

5. Simplicity. Iconic bridges generally display how they work. They are natural; their behavior is obvious and makes sense. They are generally simple and understandable to the general public.

6. Landmark. Iconic bridges become landmarks. They are easily recognized by the general public, and they take on a symbolism for the people or nation for whom they were built. Iconic bridges are of their own time.

7. Historical Significance. Iconic bridges frequently hold historical significance. They are often the first of their kind, and they sometimes possess a unique historical or engineering significance.

8. Longevity. Iconic bridges are often characterized by longevity. Whether marked by age or simply age for the type of design, an iconic bridge has stood the test of time and remains standing in all its glory, faithfully serving the people for whom it was built.

Amgen Tour of California

DEFINING BICYCLE LANES

Bike Paths (Class I)
Trails separated from the road

Bike Lanes (Class II)
On-street facilities with signs and roadway stripes

Bike Routes (Class III)
On-street facilities with signs, but no roadway stripes

Strategies

a) Utilize best-practice engineering design and technology for HST aerial and at-grade infrastructure.

b) Integrate public art as part of the overall design of HST infrastructure in San José. Participation of artists as members of the rail and station design teams shall ensure public art that is sensitive to the needs and desires of the community and passengers, create opportunities for small and large scale public art experiences, and express the cultural and artistic diversity and innovation of San José.

c) Establish an aesthetic design review process acceptable to the CHSRA and City.

4.2.2 Enhance Community Livability

Objectives

The City's highest priority is to maintain and enhance community livability. Aesthetic design of HST infrastructure shall:

a) Relate to the scale and character of San José residential neighborhoods, business districts, industrial areas and downtown development.

b) Support the development of the City's vision for its future growth as a "more prominent and complete great city," as described in *Envision San José 2040* and the Diridon Station Area Plan.

c) Facilitate community connectivity and multimodal access to transit.

Example of retail under aerial structure

d) Promote public use of the alignment right-of-way under aerial structures as accessible, visible, safe and attractive public places.

e) Maintain views to Santa Cruz Mountains, Diablo Range and the downtown skyline.

f) Engage civic and community participation in the aesthetic design process.

Strategies

a) Where alignment crosses over public and private property, design HST infrastructure to facilitate development consistent with City's General Plan goals.

b) Consult with the City to identify opportunities for public use of the right-of-way under aerial viaducts.

c) Employ urban design to enhance connectivity of the Diridon station to the surrounding neighborhoods, considering the work of the Diridon Good Neighbor Committee and the Diridon Station Area Plan.

4.2.3 Enhance San José's Identity

Objectives

a) Advance the City's vision to create an iconic design for Diridon Station and a world-class destination for the station area.

b) Create a high-quality, well-designed aerial alignment through downtown.

c) Design the I-280 crossing as a possible signature long span bridge that visually relates to the design of Diridon Station.

d) Design an identifiable HST bridge crossing at the I-880 crossing near Coleman Avenue and at the US 101 crossing north of Morgan Hill.

Spartan Stadium

Strategies

a) Design aerial infrastructure column spacing to facilitate development of Diridon Station Area Plan.

b) Develop a program for City and CHSRA review, selection and refinement of alternatives for I-280 bridge structure.

c) Develop a program for large-scale public art associated with the I-280 bridge structure that is changeable and interactive, and contributes to how people can experience the bridge by driving through it, or walking to where it can be seen from the downtown or surrounding neighborhoods.

d) Establish a collaborative CHSRA and City project team to integrate the design of the approach alignments and Diridon Station as a unified architectural and engineering project.

e) Employ lighting to enhance the nighttime aesthetics of aerial viaducts in downtown and across I-280, while minimizing glare and light impacts to residential neighborhoods.

f) Implement design for both the alignment and the station that is sensitive to the many cultures that constitute the San José community.

California Theater

4.2.4 *Complement Scenic and Agricultural Open Space*

Objectives

a) Complement and protect the scenic open space, hillside and agricultural environments in Coyote Valley.

b) Minimize the impact of the environmental footprint HST infrastructure on natural systems, significant vegetation and habitat.

c) Preserve Coyote Valley as the open space buffer between San Jose and Morgan Hill, with its distinct agricultural history and rural character.

d) Maintain views to distant mountain ranges (Santa Cruz Mountains to west or Diablo Range to the east).

e) Preserve existing public access to open space.

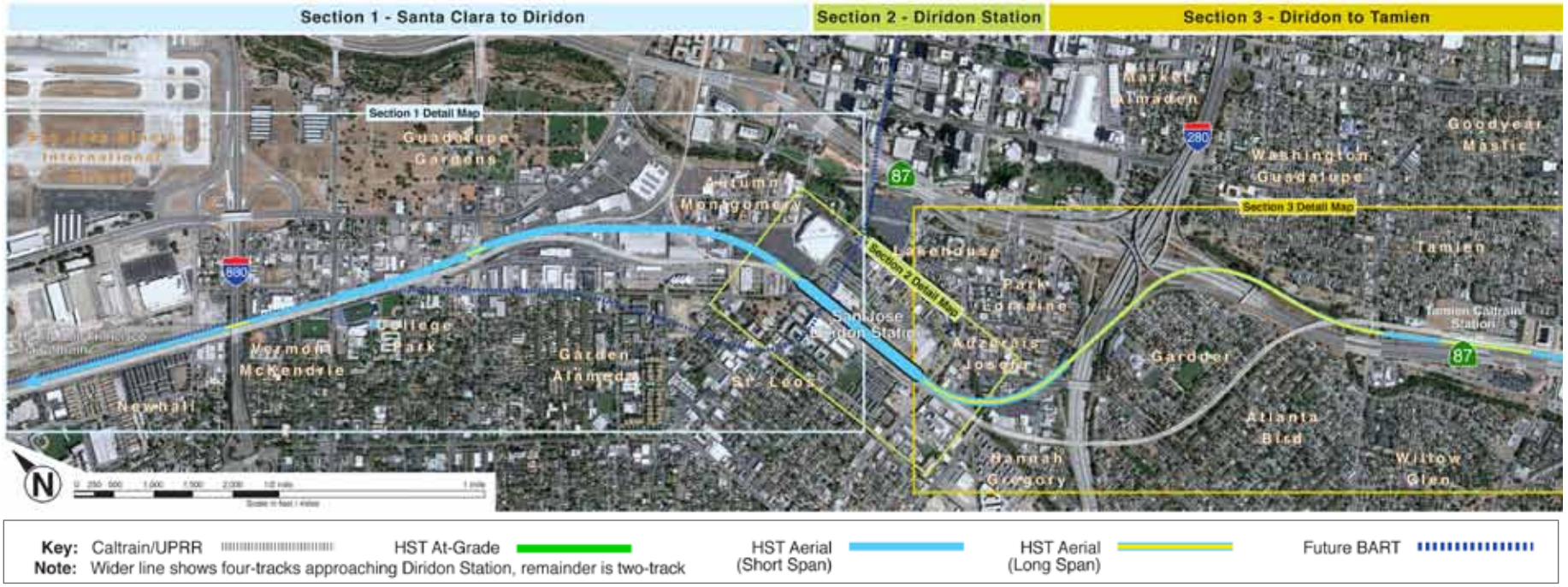
Strategies

a) Ensure the visual design guidelines apply to both alignment alternatives in Coyote Valley.

b) Maintain and enhance the historic and agricultural context of Monterey Highway as the "El Camino Real" through landscape design.

c) Preserve existing public access to open space through trails and trail access under aerial structures where feasible

d) Implement EIR/EIS biologist recommendations to restore natural habitat and habitat continuity around the structures where impacted; design wildlife crossings according to scientifically accepted methodology and in cooperation with any current or planned wildlife corridor master plans.



4.3 DEFINING CHARACTERISTICS OF THE SAN JOSE CORRIDOR

4.3.1 Six Character Areas

The Guidelines process identified six distinct character areas along sections of the corridor:

- **Section 1:** Santa Clara City Border to Diridon Station
- **Section 2:** Diridon Station
- **Section 3:** I-280/SR-87 to Tamien Station
- **Section 4:** Tamien Station to Communications Hill
- **Section 5:** Monterey Highway
- **Section 6:** Coyote Valley

The physical context for each character area is described in Context Specific Guidance (4.5).

4.3.2 HST Vertical Alignment

The HST vertical alignment adapts to available right-of-way along the Caltrain and the UPRR right-of-way and to the urban context. From north to south the HST vertical alignment varies as follows:

- Aerial viaduct extends along the Caltrain right-of-way from the City of Santa Clara border south rises southeast and descends over US 880, extends east of CEMOF and south to enter Diridon Station.
- From Diridon Station, the aerial viaduct continues south and turns east to cross above I-280, turning south along the east side of

SR 87 over Tamien Caltrain Station and descending to grade at Almaden Expressway.

- At-grade along the east side of the Caltrain right-of-way from Alamaden Expressway through the Communications Hill gap to overcrossing UPRR and descending to at-grade along the east side of UPRR.
- At-grade along Monterey Highway to Tulare Hill in Coyote Valley.
- For the two Coyote Valley Alternatives, one is at-grade along the Monterey Highway, and the second ascends to an aerial viaduct crossing Coyote Creek and continues west of US 101 along the Diablo Range, returns to grade at Coyote Golf Course and extends south as an aerial viaduct crossing US 101.

Aerial viaducts are predominantly short span girders, with long span sections at major street and highway crossings, the over-crossings are Los Gatos Creek, I-280, SR 87, Tamien Station, UPRR and US 101. For a detailed description of the alignment see individual sections in **Context Specific Guidance** (4.5).

4.3.3 Viewer Experience

The relationship of the alignment to the character areas along the corridor determine a HST traveler's experience of the arriving and departing San Jose Diridon Station, as well as the observer's experience of HST infrastructure from points along the corridor from ground level.

HST Traveler

For a HST traveler visiting from Southern California or the Central Valley, traveling to the San Jose Diridon Station will showcase the scenic landscape of the South Bay after crossing the Diablo Range and entering southern Santa Clara Valley at Gilroy. The arrival sequence will be:

- Viewing the scenic hillsides of Coyote Valley and the agricultural green belt while traveling north along Monterey Highway or US 101.
- Seeing the widening of Santa Clara Valley, crossing into San Jose residential neighborhoods and industrial areas along the rebuilt Monterey Parkway, crossing over UPRR and continuing north through the Communications Hill.
- Gradually rising up from at-grade to elevated views of established tree-lined residential neighborhoods and commercial areas with views across Santa Clara Valley to the east and west along SR 87 above Guadalupe Creek.
- Slowing and crossing west over SR 87 and I-280 and north to Diridon Station, with panoramic views of downtown San Jose, San Francisco Bay and Diridon Station.

San Jose International Airport Parking

- Entering Diridon Station to arrive at vibrant downtown San Jose.
- Exiting Diridon Station and travel north elevated through the heart of Silicon Valley industrial areas with views to the east of San Francisco Bay and East Bay Hills and to the west of established residential neighborhoods, commercial districts and the Santa Cruz mountains.

Ground Level Observer

There will be a diversity of ground level viewers, viewer sensitivities and viewer experiences of HST infrastructure. The meaning of the visual experience of a driver on I-280 seeing an HST bridge overhead for a moment differs from residents observing from their neighborhood. To address the points of view, the CWG identified key viewpoints to simulate ground views of the project in context. See Section 4.5 Context Specific Guidance for before and after views.

4.4 HOW TO APPLY THE GUIDELINES

This section describes how to apply the Guidelines.

Citywide Objectives

Apply High-Quality Aesthetic Design (4.2.1), **Enhance Community Livability** (4.2.2) and **Enhance San José Identity** (4.2.3) to the entire corridor. Apply **Complement Scenic and Agricultural Open Space** (4.2.4) to Section 6: Coyote Valley.

General Design Guidance

General design guidance provides design intent and/or design guidelines for application along the entire corridor as follows:

- **Aesthetics** (3.1) describes aesthetic design intent

the urban design guidelines sit HST infrastructure responsively to the local context...

- **HST Infrastructure** (3.2) provides design guidelines as described below.
- **Urban Design** (3.3) identifies urban design guidelines for how to sit HST infrastructure responsively to the local context, with the locations and specific guidance in Context Specific Guidance (4.5)
- **Landscape** (3.4) outlines objectives and strategies to apply corridor wide, and design guidelines to apply to locations identified in **Context Specific Guidance** (4.5)
- **Public Art** (3.5) describes program, process and desired outcomes to apply to the design process for the corridor.

Apply **HST Infrastructure** (3.2) guidelines as follows: Select compatible **Girder Shape** (3.2.1.1), **Column/Pier Shape** (3.2.1.2) and **Parapet** (3.2.1.3) shapes to support HST tracks and the **Overhead Catenary System** (3.2.1.6). **Viaduct Spans** (3.2.1.3) apply throughout the corridor at urban, natural and topographical feature crossings. Center and distribute spans to shape a harmonious relationship between HST infrastructure and city context. Use **Straddle Bent** (3.2.1.7) if there is no other feasible or reasonable solutions to avoid straddle bents. **Abutments** (3.2.1.5) address aesthetic design for viaduct transitions (aerial to at-grade) and bridges. Use **Materials** (3.2.4), **Finishes and Colors** (3.2.5), **Graffiti Prevention** (3.2.6) and **Lighting** (3.2.6) to guide selection for consistency of treatment throughout the corridor.

Context Specific Guidance

For the six sections see **Context Specific Guidance** (4.5) for location specific guidance on HST infrastructure, new and rebuilt street crossings, sound and retaining walls, lighting, urban design, landscape, fencing, public art and HST station design. Apply general design guidance for **Retaining Walls** (3.2.3), **Sound Walls** (3.2.2), **Urban Design** (3.3) **Landscape** (3.4) and **Public Art** (3.5) per locations and specific guidance as identified in **Section Specific Guidance** (4.5).

4.5 CONTEXT SPECIFIC GUIDELINES

Each section provides context specific aesthetic design guidance, organized as follows:

- Proposed project features and section map that indicate the type and location of aesthetic design features to enhance preliminary engineering
- Description of the existing context
- Description of the alignment
- Design objectives specific to the section
- Desired outcomes of the envisioned result with the implementation of the *Guidelines*
- Section-specific aesthetic design guidance for the proposed project features

Section-specific design guidance complements the application of general design guidance. Applied together, HST engineering can achieve the objectives of aesthetic design.

A Existing Viewpoint: I-880, looking east

A Simulation Viewpoint: I-880, looking east

SECTION 1:

4.5.1 *Santa Clara Border to Diridon Station*

Existing Context

Section 1 extends 2.2 miles from the Santa Clara city border to Diridon Station. The predominant landscape is industrial with two areas of moderate urban density along the corridor. The first area, to the east of the tracks, is one- to two-story big-box retail development with surface parking. The second area, to the west of the tracks and the Historic Diridon Station, is the Alameda business district with older one- to two-story commercial buildings and new two- to six-story pedestrian-oriented mixed-use development. Low-profile industrial buildings with surface parking are setback from the tracks by paved undeveloped areas, with uses associated with Caltrain operations. Roadways have minimal landscaping. Tree-lined single-family residential neighborhoods are located to the west of the industrial uses.

Alignment Description

In Section 1, the new alignment will be constructed for HST only. Caltrain tracks are at grade and all crossings are grade-separated. The Altamont Commuter Express, Capitol Corridor, Amtrak and Union Pacific Railroad (UPRR) use the corridor

Note: Wider line shows four-tracks approaching Diridon Station, remainder is two-track.

Proposed Project Features

1. Provide long-span bridge crossing I-880.
2. Provide pedestrian crossing over Hedding.
3. Grade separate Hedding Street below Caltrain tracks (two lanes with sidewalks and bike lanes).
4. Maintain Stockton Avenue across Hedding.
5. Provide tree screen from Hedding to Taylor.
6. Abandon existing tracks (freight).
7. Relocate traction power substation.
8. Coordinate column orientation and spacing with land use.
9. Provide daylight through four-track viaduct between two-track girders (to be evaluated).
10. Implement pedestrian sidewalk improvements.

B Existing Viewpoint: Hedding, looking east

B Simulation Viewpoint: Hedding, looking east

with freight service. The future BART extension will run alongside this section, primarily in a tunnel. With the one aerial viaduct alignment proposed, there are two scenarios:

- Diridon Station as a terminal station - Four tail tracks would extend north from the station to just south of Hedding Street to allow for operational movements involved with turning back trains toward the south.
- Diridon Station as an inline station - As part of a project extending HST service to San Francisco, four tracks would extend north and transition to two tracks between Lenzen Street and Cinnabar Street.

In both scenarios, a two-track aerial viaduct will extend from the end of the four-track portion to the Santa Clara border south crossing over I-280. For both scenarios, the design of the station (platform locations, access points, etc.) is the same and a traction power station would be located at Stockton Avenue and University Avenue.

Section Objectives

- Create an attractive long-span structure over I-880 that minimizes visual impact to views of the surrounding hills.
- Integrate aesthetic design of station approach infrastructure and Diridon Station to create a unified, coherent HST project.

Aesthetic design shall have a unified vision for Diridon Station and the station approach infrastructure.

- Advance implementation the Diridon Station Area Plan through aesthetic design of the HST infrastructure.

Desired Outcomes

- Industrial and employment development adjacent to and under aerial structures is supported by arrangement of viaduct spans and columns without impact to existing street connectivity.
- Rebuilt grade-separated street crossings are designed per General Plan designation and City street design standards.
- A smooth transition is designed from a two-track aerial viaduct to a four-track aerial viaduct. An unsightly abrupt change in cross sections is avoided. Potential temporary terminus of an aerial viaduct does not look temporary.

Section Guidelines

HST Infrastructure

- Transition the design of the terminus of the tail tracks to avoid a visually abrupt end, for either an interim or final end of the aerial structure at Hedding Street.
- Locate columns to maintain Stockton Avenue and University Avenue street connection.
- Regularly space columns to create a unified and ordered design of the alignment as it transitions in elevation from the City of Santa Clara to Diridon Station.
- Split the four-track aerial viaduct approach to Diridon Station to have daylight between the pair of track sections.

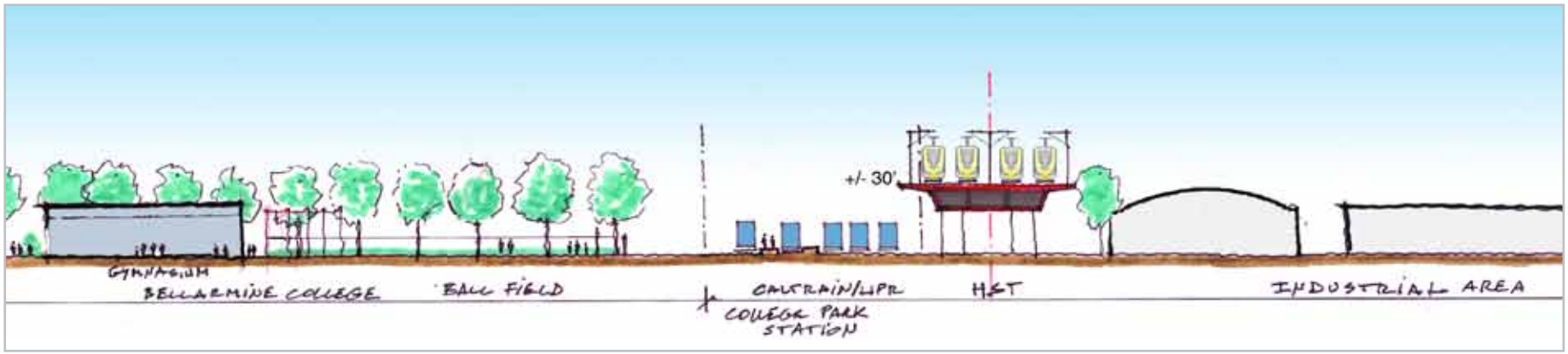
Downtown Dining

Street Crossings

- At the Hedding Street undercrossing grade separation, rebuild street per City General Plan as a two-lane street with pedestrian ways and bicycle lanes.
- Maintain the Stockton Avenue connection over the Hedding Street undercrossing to maintain the connection to University Avenue.
- Provide an at-grade cover over the street undercrossing for pedestrian, bicycle and vehicle access at Bellarmine College Preparatory.
- Maintain pedestrian and bike connections at Bellarmine campus, provide a partial cover over the grade separation to facilitate campus access across the street right-of-way.
- At the Alameda/Santa Clara Street, rebuild street and Caltrain bridge to have pedestrian and bike access and plant continuous street trees at pedestrian level for pedestrians and bikes.

Sound Walls

- Provide sound walls at the College Park neighborhood, Garden Alameda neighborhood, and Bellarmine campus, with attrac-



Cross Section: Section 1, Bellarmine College Preparatory

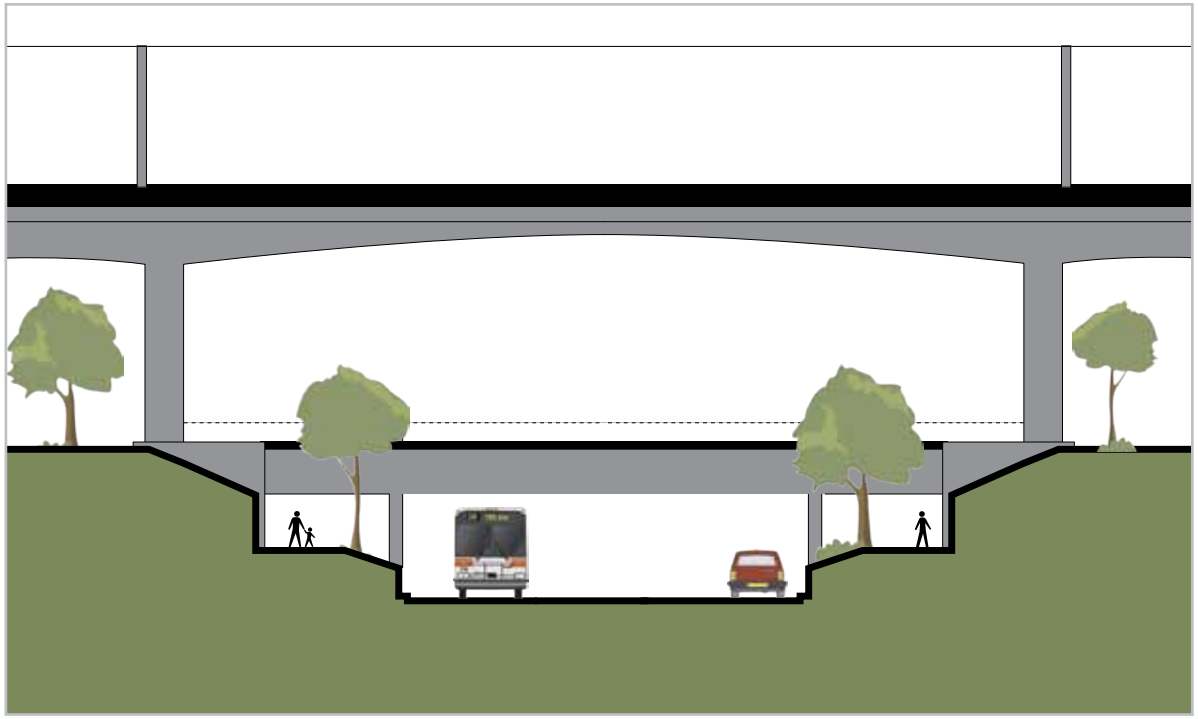
tive fencing and landscaping along the corridor that reflects the residential and campus environment.

Lighting and Landscape

- At the Hedding Street underpass, provide adequate lighting for pedestrian and bicycle safety, and landscaped "living walls" to reduce potential for graffiti.

Public Art

- Identify locations for public art that is part of the urban fabric and can be viewed at different scales and speeds, particularly at undercrossings, overcrossings, and on approach/departure of Diridon station.



Santa Clara Street cross section with HST viaduct, Caltrain bridge, pedestrian path and roadway underpass.

C Existing Viewpoint: The Alameda, toward station

C Simulation Viewpoint: The Alameda, toward station

SECTION 2:

4.5.2 *Diridon Station to Park Avenue*

Existing Context

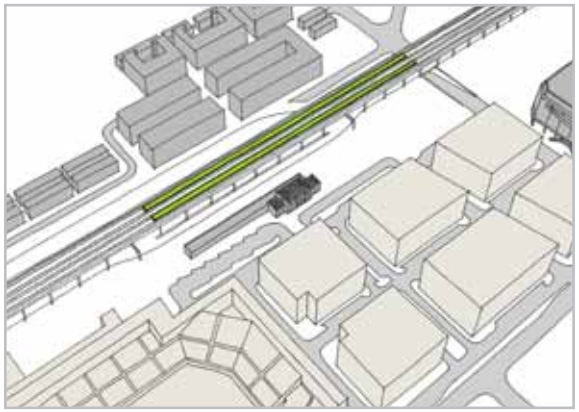
Section 2 extends 0.5 miles from W. Santa Clara Street to W. San Carlos Street. This area is currently occupied by the existing Diridon Station which serves numerous passenger rail and transit services, including Caltrain, Capital Corridor, Altamont Commuter Express, Valley Transportation Authority Light Rail and bus services. The existing conventional heavy rail and light rail platforms are located at grade and accessed via an underground pedestrian tunnel. The existing station depot building is listed on the National Register of Historic Places and is listed as a City of San José City Landmark. The National Register nomination boundary is a 12.5-acre area and includes the depot building, the W. Santa Clara Street underpass, tracks at the station, the butterfly passenger sheds, and the car cleaner's shack. The station is located adjacent to surface parking lots and the HP Pavilion to the east side of the rail tracks and multi-story residential land uses to the west. The City of San José is currently preparing a *Station Area Plan* for land with redevelopment potential in proximity to the station. The draft *Station Area Plan* recommends that east of the station be redeveloped with a Major League Baseball stadium and mixed-use development with entertainment and retail on the ground floor.

Diridon Station to Park Avenue

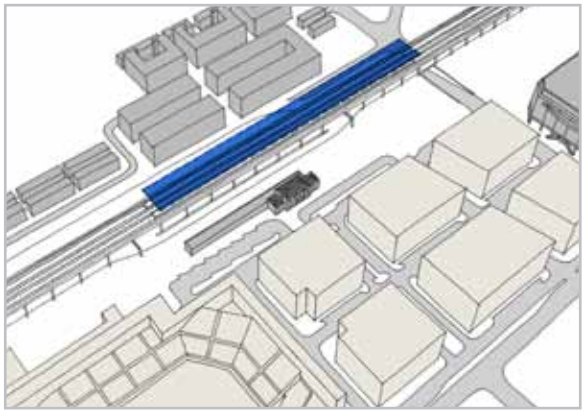
Note: Wider line shows four-tracks approaching Diridon Station, remainder is two-track.

Proposed Project Features

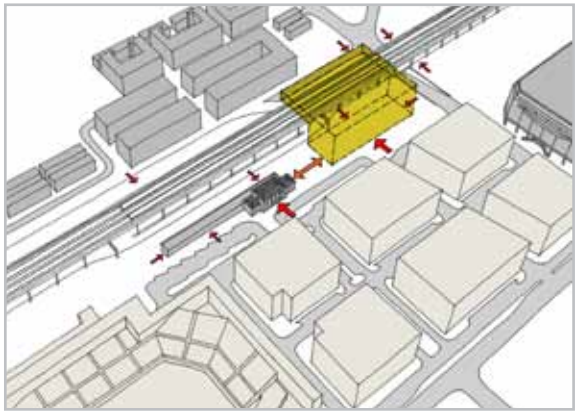
The proposed project features are design guidance for the Diridon HST station.



11 HST station with two island platforms and four tracks.

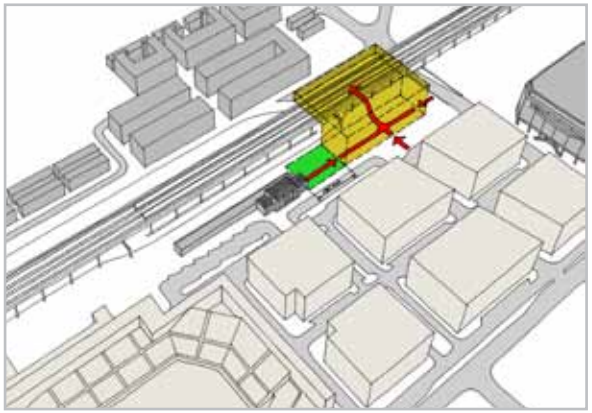


12 Platform canopies extend along length of platforms to south of Santa Clara Avenue. Platform canopies shall not cross over Santa Clara Street and extend north.



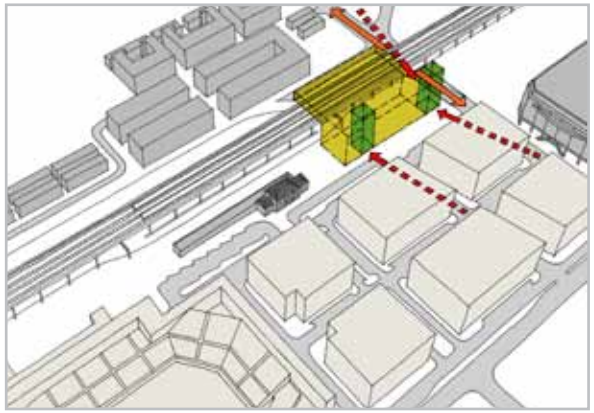
13 Passenger concourse and main station entry north of the historic depot.

14 Mezzanine level above Caltrain tracks and below HST platforms connecting HST and Caltrain platforms and with east-west pedestrian access across Caltrain tracks.

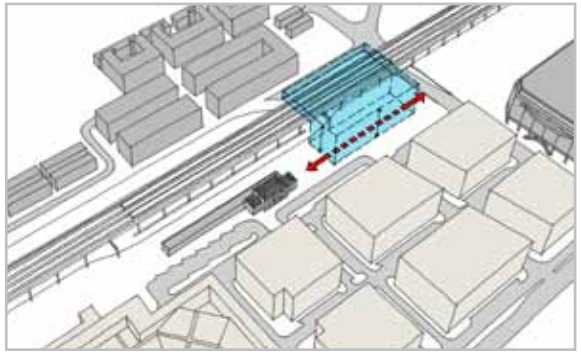


15 A public plaza faces the main station entrance with active ground floor uses directly accessing the plaza with retail, commercial or public uses. Flexible plaza design to accommodate a variety of uses such as a farmers' market or cultural events.

16 Secondary entrance and connection to the mezzanine level on the west side of the tracks. The HST station shall provide a directly visible and accessible route to attract travelers from the street level through the station ground level up to the mezzanine level. Provide station access and pedestrian connectivity through the station at the mezzanine level serving east-west and north-south routes of travel. Station access and pedestrian connectivity shall be directly visible at street level from neighborhoods with multiple access points from the east, west, north and south of the station.



17 Maintain view corridors down Santa Clara Street and the Alameda towards Mt. Hamilton. A prominent architectural feature of the HST station shall be visible from a distance, from new streets located to the east of the station or Santa Clara Street.



18 Direct connections for passengers transferring from HST to commuter services at the historic depot. Create a sense of openness with tall, generously proportioned and expansive spaces in the station. Provide transparency and visibility through the HST station building when viewed from the west or east.

D Existing Viewpoint: Santa Clara Street, looking west

D Simulation Viewpoint: Santa Clara Street, looking west

The station area has been extensively studied in other, existing planning documents. The design of the aerial alignment through this area and the HST station shall comply with the recommendations in the *Diridon Area Station Plan* and the *Diridon Station Area Good Neighbor Committee Framework for Implementation*.

Alignment Description

In Section 2, the HST tracks will be elevated approximately 70 feet over the existing conventional heavy rail alignment. Four tracks will be provided in the station area. A new HST station will be built to the north of the existing station building. The new HST station will have a main entrance facing east, with a passenger concourse located at the plaza level. A mezzanine level will provide HST passenger access to all four tracks with two island platforms. Secondary entrances from street level to the mezzanine are to the west of the Caltrain tracks and south of the historic station.

HST Station Design

The ***Guidelines*** provide design direction for both functional and iconic HST Station design.

Functional Design

The City and CHSRA agree that a well-designed, functional HST station can achieve excellence in aesthetic design by meeting the objectives, proposed project features and guidelines of this

E/F Existing Viewpoint: Diridon Station

E Simulation Viewpoint: Existing Diridon Station and New Iconic HST Station

section. An example functional HST station may have the following features as illustrated in Simulation F, right, and Figure 1, page 52:

Example Functional HST Station

- Height and building massing in scale with historic depot
- Platform canopies simple and functional
- Intimate scale public plaza between HST station and depot
- Roof steps up for vertical circulation to concourse and platforms

F Simulation Viewpoint: Existing Diridon Station and New Functional HST Station

Iconic design is achieved when design elements work together to create a landmark that captures the spirit and imagination of the time and place.

Figure 1: Functional Diridon Station

Iconic Design

An iconic HST Station design would further enhance the architectural character, public spaces, landscape and public art of a functional HST station design. Iconic design is characterized by impressiveness, innovative technical solutions, exceptional beauty, simplicity and the aesthetics of how a station and infrastructure fit their local context (see TRB description of iconic design on page 30). Iconic design is achieved when design elements work together to create a landmark that captures the spirit and imagination of the time and place.

The City of San Jose seeks to develop an "iconic" design for Diridon Station subject to available City funding and per the Roles and Responsibilities in Chapter 5. Achieving "iconic" design will be through a collaboration of the City, the CHSRA and the San Jose community. Simulation E, previous page, and Figures 2, 3 and 4, page 53, present example iconic HST station designs with the following characteristics:

Example 1: Iconic HST Station Mixed-Use

- Mixed-use building program combined with HST station building
- Transparent roof covering platforms
- Public plaza extends along Cahill Street
- Green walls and building design as public art

Example 2: Iconic HST Station Focused Arrival (see Simulation E)

- Iconic design focuses on a new landmark station building
- Organic roof cover connects to pedestrian street level
- Visitors experience a great indoor and outdoor space
- Grand public plaza along Cahill Street extends under open roof canopy

Example 3: Iconic HST Station Big Roof

- Sculptural, tensile roof structure
- Impressive scale of structure as arrival and departure experience
- Fully enclosed platforms
- Centrally located main entrance with partially covered public plaza

For additional iconic design concepts developed by the City of San Jose for the Diridon HST station and the Santa Clara Street crossing see Appendix.

Section Design Objectives

Aesthetic Design

- Create a unified, coherent project that integrates aesthetic design for Diridon Station and station approach infrastructure north and south of the station.

Architectural Character

- Reflect the Silicon Valley spirit of innovation and San José's rich history of progress through world-class architecture.
- Acknowledge San José's agricultural history and verdant character by incorporating landscaping features prominently.

Sense of Place

- Create a strong sense of place for the Diridon area, with the station at the center of a vibrant, walkable, urban mixed-use district. The Diridon area is to be a recognizable destination that identifies San José as the center of Silicon Valley, the technological capital of the world.
- Integrate with and complement adjacent land uses.
- Encourage the integration of significant public art as outlined in Diridon Station Area Plan.

Functional Design

- Create a transportation facility that is highly functional for passengers and operators. Balance the multiple station functions including high-volume commuter facility, long-distance train station, and intermodal passenger hub.
- Incorporate sustainable design features.
- Optimize legibility and way finding.
- Ensure the flexibility of phased implementation as new transit services are added over time.

Multi-modal Access and Circulation

- Encourage multi-modal station access and, including walking and cycling.
- Design for universal accessibility.
- Maximize accessibility and connections to adjacent neighborhoods.

Desired Outcomes

- Diridon Station and station approach infrastructure to the north and south of the station

Figure 2: Iconic Diridon Station: Example 1

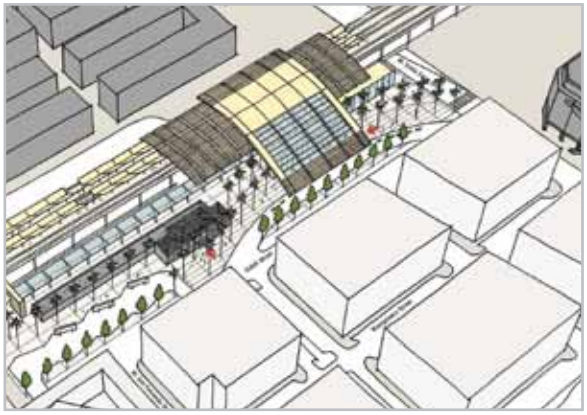


Figure 3: Iconic Diridon Station: Example 2

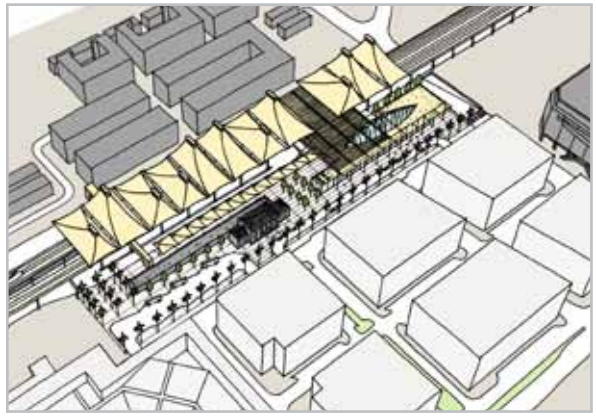
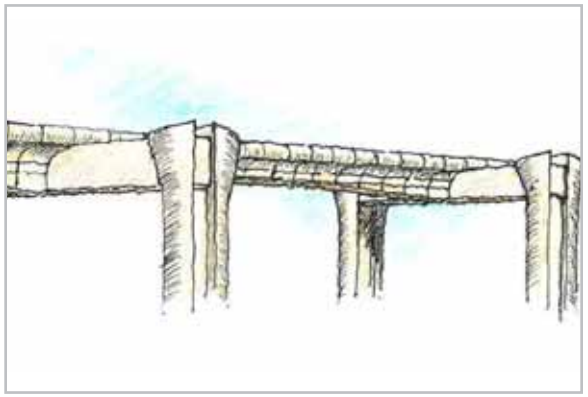


Figure 4: Iconic Diridon Station: Example 3



Park Avenue Straddle Bents Design Concept

are unified and aesthetically refined when viewed from streets and public places on both sides of the alignment.

- Aesthetic design of the HST Station and HST infrastructure advances implementation the Diridon Station Area Plan, including public access and use of land under aerial structures.
- Historic resources are protected and respected through appropriate scale and proximity of the HST station building, functional integration of HST station and historic depot rail services and shared access to transit services.
- Light spillover is minimized from the HST station building to the neighborhood west of the station.
- Sound spillover impacts are minimized from announcements at the HST station by orienting speakers away from residential neighborhoods.

Section Guidelines

HST infrastructure

- Design HST station straddle bents and haunched or constant depth girders to meet in the same plane and be equal depth if possible. The bent span should be kept as short as possible, with the girder centered on the bent span. The cross section of the bent span should reflect the girder span. Where columns flair to meet the beam, provide space for beam seats. The bent columns should flare into the bent-beam, with the beam flare following the slope of the column in section.

Station Access

- Provide clearly defined zones for passenger and taxi pick-up and drop-off in proximity to the main HST station entry and well coordinated with major pedestrian routes.
- Enhance the pedestrian and bike undercrossing at Santa Clara/The Alameda.
- Provide well-designed and sufficient bicycle parking, including a secure bicycle parking station and space for a potential bicycle repair shop.

Cross Section: Section 2, Alameda-Santa Clara

Station Orientation

- The HST station building shall be oriented east towards downtown and Cahill Street, with HST station architecture addressing the views from the west side of the station and aerial HST platforms.

Station Architecture

- The HST station architecture shall reflect the character and aspirations of San José.
- Design for a variety of visitor experiences including first-time users, commuters and long-distance travelers, individuals and travel groups, greeters and station visitors, and attendees of sports and special events.
- Station design shall be responsive to San José's mild climate, using natural ventilation and open air spaces to the extent possible.

Station Relationship to Historic Depot

- The HST station shall be compatible in terms of scale and massing to the historic depot. The Cahill elevation of the new HST station shall not overwhelm the historic depot in terms of height and proportion.
- To create a public plaza of sufficient size, the southern elevation of the HST station shall be located a minimum of 150 feet from the north wall of the existing station.

Landscape Character

- Select and prominently locate landscape features that acknowledge San José's agricultural history and verdant character.

Sound walls

- Engage the community in the design of sound walls including the Cahill Park Neighborhood. Consider translucent sound walls on aerial structures to minimize size of structure.

G Existing Viewpoint: Bird Avenue, looking west

G Simulation Viewpoint: Bird Avenue, looking west

G Simulation Viewpoint: Bird Avenue, looking west with fuure development

SECTION 3:

4.5.3 I-280/SR-87 Crossing

Existing Context

Section 3 extends 1.5 miles from Park Avenue to Tamien Caltrain Station. The landscape south of Diridon Station to I-280 is moderate urban density commercial and residential uses. West of the tracks is the Dupont/McEvoy area with single-story industrial and three-to-four story moderate density residential buildings. Roadways have minimal landscaping. East of the tracks is Royal/Auzerais single-story commercial area with surface parking and Park/San Carlos neighborhood with mixed single family and low-rise multi-family residential and retail/commercial uses with uneven back-yard landscaping. Roadways in both areas have minimal landscaping. At West

I-280/SR-87 Crossing

Note: Wider line shows four-tracks approaching Diridon Station, remainder is two-track.

Proposed Project Features

19 Accommodate future Los Gatos Creek trail.

20 Provide daylight between two-track viaduct structures (to be evaluated).

21 Minimize the number of columns with the use of long-span haunched girder construction for approach to Diridon Station and I-280 long-span bridge. Develop column orientation and spacing to support future park site uses, reduce number of straddle bents and enable development at the Royal/Auzerais area per the Diridon Station Area Plan.

22 Provide opportunity for active public use of space under the viaduct.

23 Implement gateway improvements at the Bird Avenue and Auzerais Avenue intersection.

24 Implement I-280 long-span bridge structure.

25 Maintain/restore Guadalupe Park Trail.

26 Provide trailhead plaza for Route 87 Bike Path.

Existing Viewpoint: Bird Avenue, looking north

Simulation Viewpoint: Bird Avenue, looking north

San Carlos Street the tracks cross the Los Gatos Creek leading the Guadalupe River Park.

The *Diridon Station Area Plan* envisions open space to the south and a potential ballpark to the east of the station. Future higher density, multi-story employment, residential, hotel and retail uses are envisioned to the west and east of the tracks. South of I-280 and to the west of SR 87 is the Greater Gardner neighborhood, comprised of older single-family residential. To the east of SR 87 is the Washington-Guadalupe area, an older single-family residential neighborhood. Extending along SR 87 is the Guadalupe River open space and trail. The existing environment at the Tamien Caltrain Station area includes an undeveloped parcel, surface parking, daycare and the first phase of a high-rise residential transit-oriented development. Future higher density transit-oriented development is planned for the station area.

Alignment Description

The four-track aerial alignment turns to the east immediately south of the elevated San José HST platforms, separating from the existing Caltrain right-of-way. The four-track aerial transitions to a two-track aerial as it crosses over the intersection of Bird Avenue and Auzerais Avenue. The alignment extends over the right-of-way of I-280 and turns south along the eastern edge of SR-87 along the Guadalupe River at Virginia Street. It passes over West Virginia Street and continues

1 Existing Viewpoint: Bird Avenue at I-280 ramp, looking east

1 Simulation Viewpoint: Bird Avenue at I-280 ramp, looking east

along SR-87, and at Willow Street partially extends over the existing Caltrain right-of-way over the Tamien Caltrain Station.

Design Objectives

- Create a unified, coherent project that integrates aesthetic design for both station approach infrastructure and Diridon Station.
- Advance implementation the Diridon Station Area Plan through aesthetic design of the HST infrastructure.
- Create a long-span structure over I-280 and SR- 87 that is consistent with the Diridon Station design, complements the downtown skyline and minimizes impacts to views to the hills to the east and west.

Desired Outcomes

- HST Infrastructure design supports development of the Diridon Station Area Plan.
- New gateway design at Bird Avenue and Auzerais Avenue with landscaping, street trees, mini-park and pedestrian improvements under the aerial viaduct.
- An I-280 long-span bridge structure will create an identifiable landmark for downtown San José.
- Guadalupe Park trail will be maintained and enhanced where the location of HST infrastructure modifies the trail.

Design Guidance

HST Infrastructure

- Use long span balanced-cantilever construction to increase spans, reduce the number of columns and straddle bents, frame views on cross streets and minimize the impact on private property south of Diridon Station to I-280.
- Collaborate with City and community on column location and traffic calming to eliminate a straddle bent at Royal Avenue.

J Existing Viewpoint: Gardner Academy, toward crossing

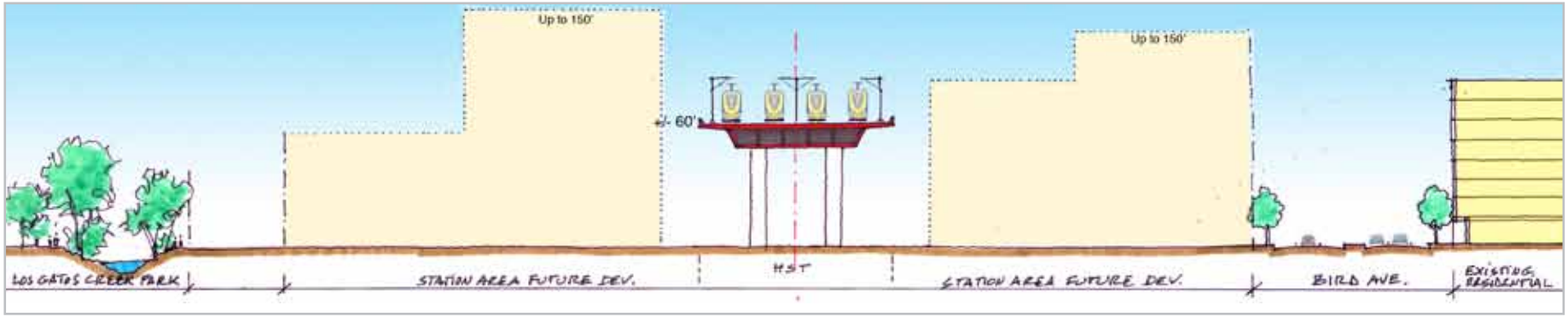
J Simulation Viewpoint: Gardner Academy, toward signature bridge

J Simulation Viewpoint: Gardner Academy, toward functional bridge

- Split the four-track aerial viaduct approach to Diridon Station to provide daylight between the pair of track sections.

Urban Design

- Maintain pedestrian and bike connections along Los Gatos Creek.
- Coordinate with City and community on gateway design for the intersection of Bird and Auzerais Avenues consistent with the Diridon Station Area Plan.



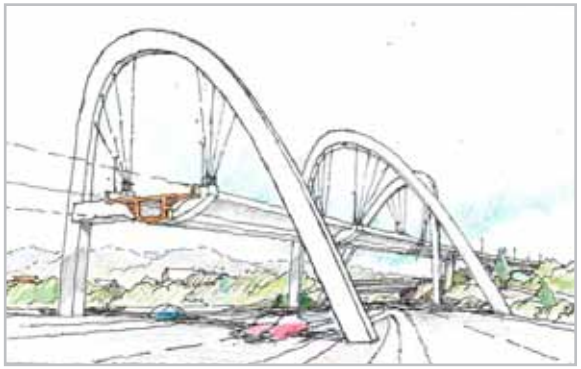
Cross Section: Section 3, Bird Avenue

Public Art & Landscape

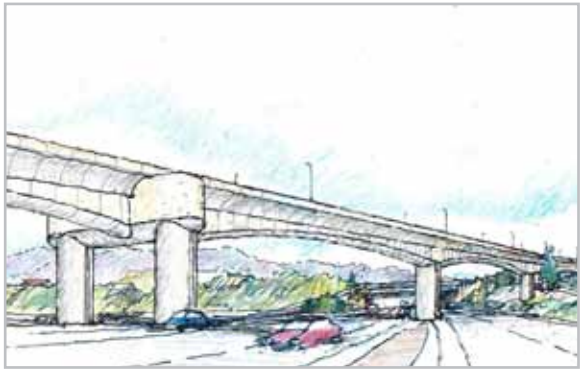
- **Public Art:** Identify locations for incorporating public art that is part of the urban experience at the Bird Avenue HST overcrossing. Consider how public art can be viewed from near and far and at different travel speeds such as pedestrians, bicyclists and motorists on streets and the freeway.

- **Lighting:** Identify locations for lighting as public art. Consider decorative illumination of the I-280 Bridge and station approach viaducts that respects the scale, dignity and permanence of the structures. Consider these structures as a whole composition, with using lighting with subtly and simplicity of means. Avoid high intensity, uniform lighting, and consider lower intensity gradations of light to highlight structural features and minimize lighting impacts to surrounding residential areas.

- **Landscape:** Identify locations to incorporate landscape design, urban design and public art to enhance the visual environment consistent with Diridon Station Area plan to shape a gateway and an identifiable place at the Bird Avenue overcrossing.



Concept for unique structure for I-280, looking west



Long-span haunched girder structure for I-280, looking west

K Existing Viewpoint: Tamien Station

K Simulation Viewpoint: Tamien Station

SECTION 4:

4.5.4 SR 87/Communications Hill

Existing Context

Section 4 extends 3.4 miles from the Tamien Caltrain Station to Monterey Highway near Fehren Drive. The landscape is varied, including the SR-87 freeway, industrial uses, pockets of residential uses and the slopes of Communications Hill. The area surrounding Tamien Station includes: the SR-87 freeway to the west with the Valley Transit Authority light rail line in the median and Class I bike trail hugging the east side of the freeway; residential areas ranging from older single-family residential to clusters of garden condominiums and a mid-rise residential building; and low-rise industrial buildings along the Caltrain/UPRR tracks. The area south of Tamein station is home to industrial uses until Curtner Avenue, where the railway tracks turn away from the freeway to cut through Communications Hill. Row houses and mobile homes are across the tracks from each other on the north side of the hill. A retained cut brings the existing railway tracks through Com-

SR-87/Communications Hill

Proposed Project Features

27 Aerial structure integration with Tamien Station platform canopy.

28 Provide screening adjacent to residential areas.

29 Rebuilt landscaped Class I bike path along SR-87 from Willow Street to Curtner Avenue.

30 New Three Creeks Trail connection from west of SR-87 to Almaden Road, including intersection with SR-87 trail and grade separations with HST and Caltrain/UPRR.

31 Traction power station landscaping.

32 Bike lanes and sidewalks on both sides of rebuilt Curtner Avenue overcrossing.

33 "Natural" texture/color on retaining walls through Communications Hill.

L Existing Viewpoint: Tamien Caltrain Station from VTA Platform

L Simulation Viewpoint: Tamien Caltrain Station from VTA Platform

munications Hill to the south, with a second mobile home community to the east of the tracks and industrial buildings further south. West of the tracks, the Lick Quarry and associated industrial machinery and activity dominates the eastern slope of Communications Hill.

Alignment Description

In Section 4, the HST is a two-track aerial structure just west of the Caltrain/UPRR tracks. At the Tamien Caltrain Station, the HST is above the western station track, supported by straddle bents that have one row of columns placed in the center of the station platform, the other row next to the freeway. The aerial continues south, running between the existing rail tracks and freeway, partially over the existing bike path. The aerial ends north of Almaden Road, with the HST descending to pass beneath the Almaden Expressway overcrossing at the same grade as the existing railway tracks. This configuration, two tracks for Caltrain/UPRR and two tracks for at-grade HST falls within the existing rail right-of-way and continues south. It passes under Curtner Avenue and through the cut in Communications Hill towards the Lick Quarry. At the quarry the HST tracks

M Existing Viewpoint: Alma, looking west

M Simulation Viewpoint: Alma, looking west

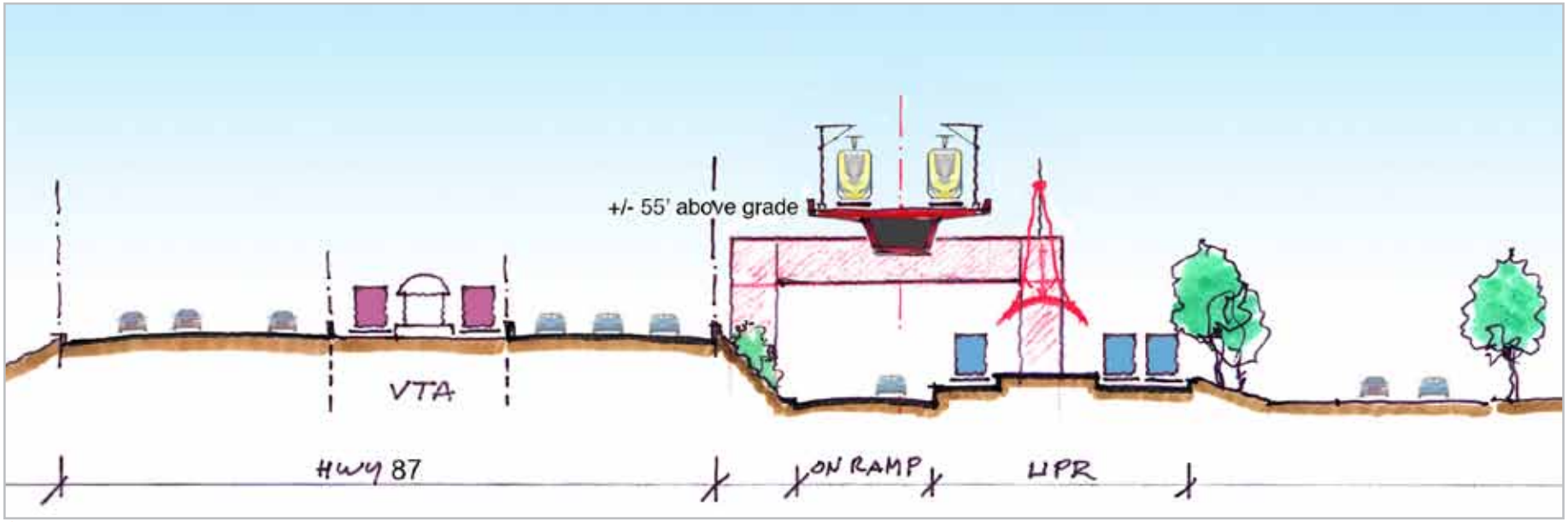
leave the Caltrain/UPRR tracks and climb onto an aerial structure to pass over the Caltrain/UPRR tracks, descending on their east side, in the right-of-way of Monterey Highway. A traction power station is located east of the railway corridor, just to the north of Curtner Avenue.

Design Objectives

- Increase Tamien Station's visibility with the rebuilding of the Caltrain station's platform canopy.
- Minimize the visual impact of the expanded cut through Communications Hill through use of retaining walls with "natural" surface treatments and grading that contours to the hillside.
- Maintain pedestrian and bicycle trail connectivity where impacted by alignment.

Desired Outcomes

- Rebuild the Class I bike path under HST aerial and alongside HST tracks as a safe, open and publicly visible route with landscaping and shade trees along the route.
- Construct the Three Creeks Trail crossing of HST and Caltain/UPRR to allow a grade-



Cross Section: Section 4, Tamien

separated Class I bike path from west of SR-87 to Almaden Road.

- Include landscaping at the traction power station to screen facility from all sides not facing the HST tracks.

Design Guidelines

HST Infrastructure

- Integrate the design of sound walls on aerial structures with the girder to minimize abrupt changes in form and color.
- Consider translucent sound walls on aerial structures to minimize size of structure."

Sound Walls

- Engage community in discussion of sound-wall design.
- Where sound walls are located at grade, maximize the use of vine coverage on the wall or plant dense bushes and trees in front of the wall to minimize surface open to graffiti.

Existing Viewpoint: Communications Hill Cut

Simulation Viewpoint: Communications Hill Cut

Street Crossings

- At Willow Street grade separation, provide an enhanced entrance to the SR-87 Class I trail with small plaza and signage.
- At Almaden Road, provide long-span structures to complement the spans of SR-87.
- At Curtner Avenue, rebuild the overcrossing to include standard-width sidewalks and Class II bike lanes.

Landscape

- Provide a landscape green-edge to the HST corridor where it passes residences, parks, roadways and paths.

Public Art

- Engage community in discussing design, location and integration of public art along soundwalls and retaining walls

0 Existing Viewpoint: Monterey Highway at Lick Quarry

0 Simulation Viewpoint: Monterey Highway at Lick Quarry

SECTION 5:

4.5.5 *Monterey Highway*

Existing Context

Section 5 extends 6 miles along Monterey Highway from Fehren Drive to Forsum Road. The predominant landscape east of the HST is Monterey Highway, lined primarily with residential uses with nodes of commercial retail and office uses at most major intersections. West of the HST is the Caltrain/UPRR railway tracks, lined with residential development and some mixed commercial development. Both sides of the corridor are similar suburban development from the 1960-80s. There are only six connections from west to east (not including the SR-85 freeway), due to the long-established combined rail and highway corridor. Three of these connections, Capitol Expressway, Blossom Hill Road and Bernal Road, have long east-west approaches not conducive to pedestrians. Traffic speeds are high on Monterey Highway; intersection spacing is distant. This has caused the adjacent residential areas to turn their backs to the highway, with long stretches of soundwalls along the roadway. West of the HST, the neighborhoods turn their backs to the UPRR/Caltrain tracks.

Alignment Description

Section 5 is largely defined by at-grade HST with the reconstruction of Monterey Highway defining the visual change in the section. Near

Proposed Project Features

34 Minimize the number of straddle bents at the Caltrain/UPRR crossing by increasing span length.

35 Create well-landscaped parkway with Class I bicycle and pedestrian path on the east side of Monterey Highway throughout entire section.

36 Provide new or rebuilt pedestrian/bicycle crossings that span Monterey Highway, HST and the Caltrain/UPRR tracks at Branham Road, Blossom Hill Road, and Blossom Hill Caltrain Station.

37 Provide landscaping for new grade separations.

Monterey Highway

P Existing Viewpoint: Branham Lane at Monterey Highway

P Simulation Viewpoint: Branham Lane at Monterey Highway

Q Existing Viewpoint: Monterey Highway near Edenview

Q Simulation Viewpoint: Monterey Highway near Edenview

Fehren Drive, as the HST leaves the Communications Hill area, the HST alignment rises on an aerial structure to pass over the Caltrain/UPRR tracks from the west to the east. As the HST meets Monterey Highway, it descends and changes from an aerial structure to a retained-fill structure between the roadway and Caltrain/UPRR. As it nears the Capitol Expressway overcrossing, HST dips down into a trenched section. The HST then returns to run at grade between Monterey Highway and the Caltrain/UPRR tracks for the remainder of the section.

To accommodate placement of HST in the existing right-of-way of Monterey Highway, the roadway will be rebuilt, starting near the intersection at Fehren Drive. The new configuration of the roadway will include two lanes in each direction with Class II bike lanes, landscaped median and a single left-turn lane where needed. The western side of the roadway the existing walnut trees will be removed and sidewalks will be provided to connect bus stops to signalized crosswalks. On the east side, there will be a Class I pedestrian and bike pathway, landscaped and shaded by trees along the length of the rebuilt highway. A sound wall enhanced with landscaping, art or graphics will separate the roadway from the HST. At three intersections (Skyway, Branham and Chynoweth), Monterey Highway and the intersecting cross street will descend approximately 25-30 feet so the cross street can pass under the

existing Caltrain/UPRR tracks and the HST. The remaining existing grade separations pass over Monterey Highway and will be modified so that Monterey Highway can be shifted to the east side of its right-of-way.

Design Objectives

- Rebuild Monterey Highway as a landscaped parkway, including improved facilities for bicyclists and pedestrians.
- Ensure new undercrossings are inviting and safe for pedestrians and bicyclists.
- Avoid visual monotony along Monterey Highway and create neighborhood identity through landscape and public art.
- Engage local community members in the design of sound walls and streetscape improvements along Monterey Highway.
- Improve Monterey Highway to build east-west neighborhood connectivity across the right-of-way and link neighborhoods together.

Desired Outcomes

- Establish identifiable bus stops to support transit use along Monterey Highway.
- Extend grade separations required to reach the Blossom Hill Caltrain station oto the west side of the Caltrain/UPRR corridor, and provide pedestrian and bicycle links from west to east to the Caltrain stations.
- Improve existing grade-separated street crossings will be improved with pedestrian and bicycle connectivity, street trees and landscaping, including new and rebuilt pedestrian and bicycle crossings at Branham and Blossom Hill Roads.
- Make the Class I pathway along the east side of Monterey Parkway a feeder to the Coyote Creek Parkway. Establish and maintain trees and shrubs to shade users on the pathway.

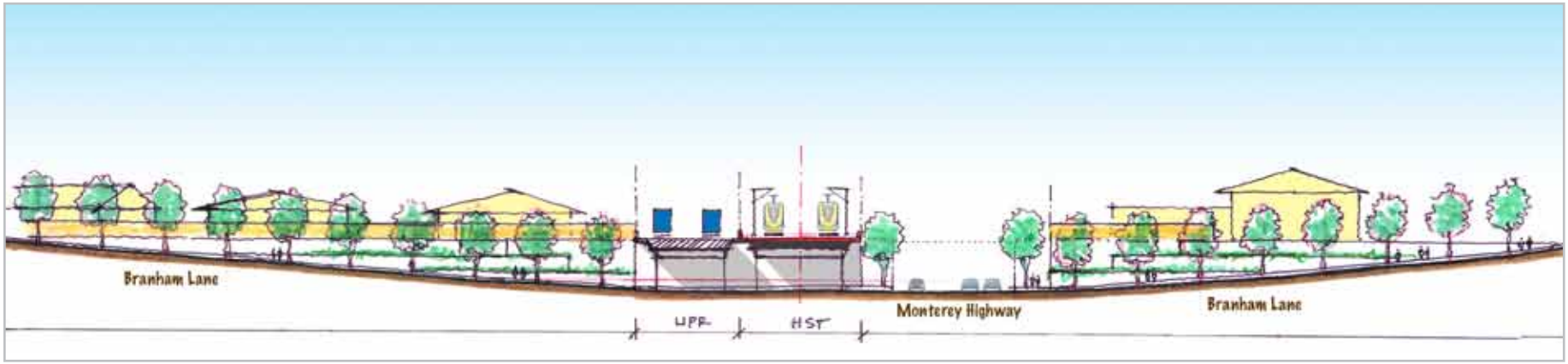
Design Guidelines

HST Infrastructure

- Use landscape and enhanced surface treatments for the retained fill wall parallel to Monterey Highway north of Capitol Expressway.
- Minimize the use of retaining walls to the extent feasible.
- Provide enhanced fencing along the top of the HST trench wall on the Monterey Highway side.
- Where space permits, break up retaining walls vertically into a series of landscaped terraces.
- Allow for space between Caltrain/UPRR and HST bridges to allow maximum light to penetrate to roadway beneath.

Street Crossings

- New undercrossings will have design treatments on retaining walls where landscaped terracing of the walls is not possible due to available right-of-way constraints.



Cross Section: Section 5, Branham Lane

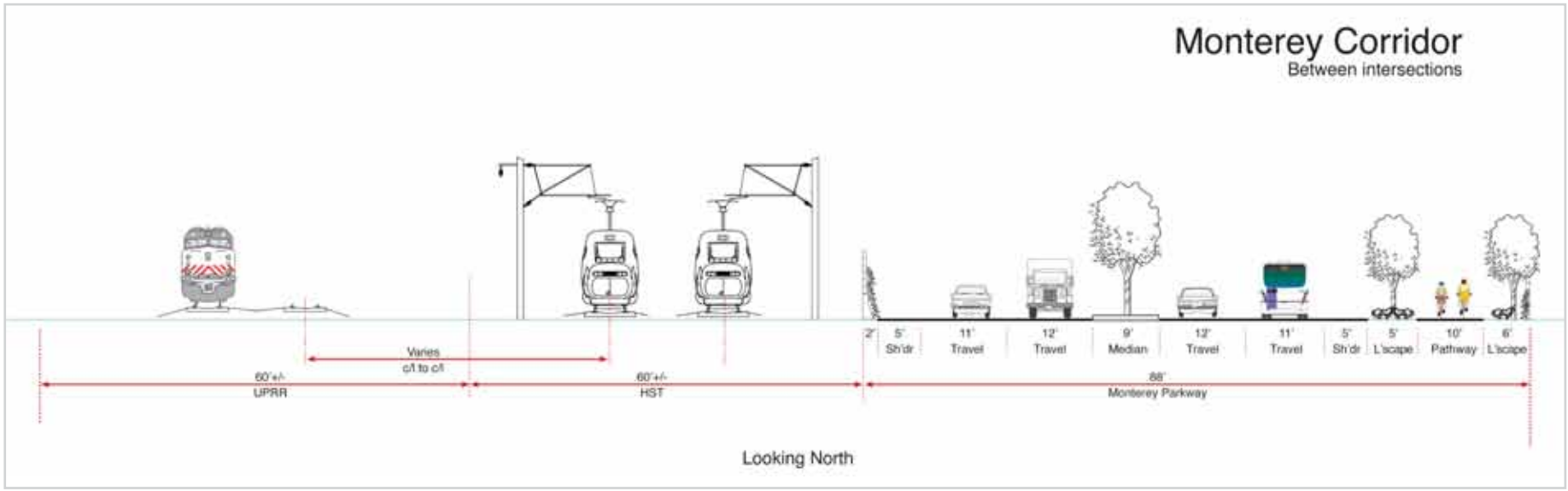
- New undercrossings will have sidewalks sufficiently wide for pedestrian and bicycle users and physically separated Class II bike lanes in the street.
- Landscape improved overcrossings and ramps that meet Monterey Highway as a continuation of greening of the corridor.
- Street crossings shall be designed to identify neighborhoods along Monterey Highway. This may be accomplished through artwork, landscaping, signage or in combination.

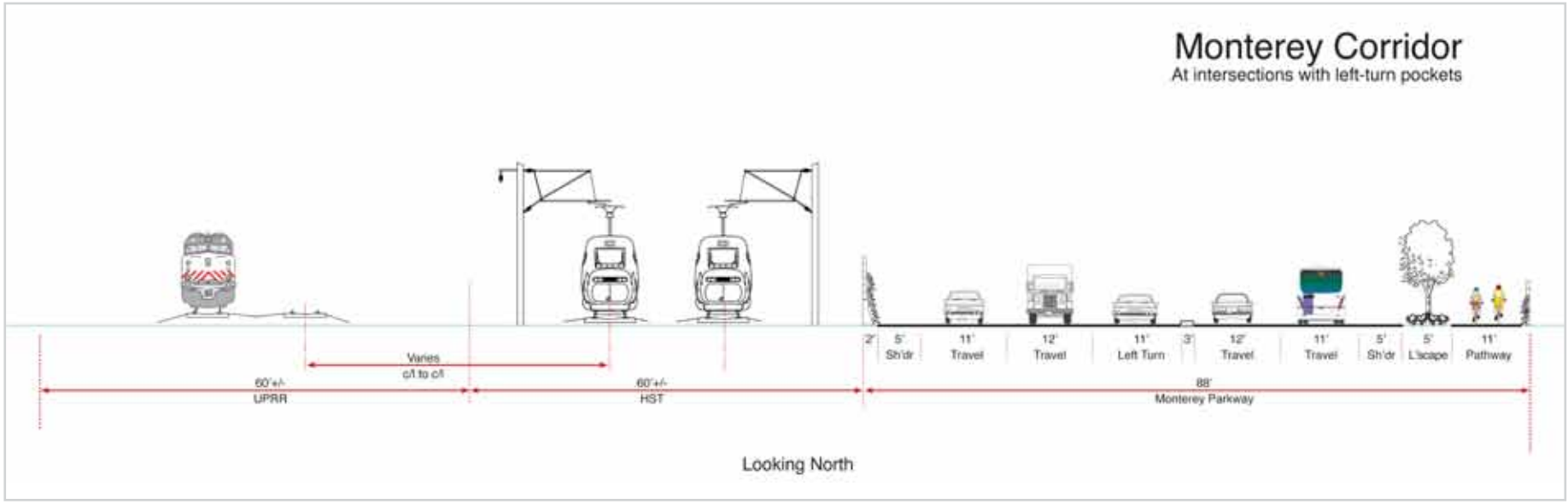
Landscape

- Provide landscaping that creates a parkway image for Monterey Highway and shaded pathway for pedestrians and bicyclists.
- Use the Class I pathway on the east side of Monterey Highway as a connection from the neighborhoods to the Coyote Creek Parkway.
- Transition landscape design from urban to rural/agricultural at Metcalf Road.
- Provide signage leading bicyclists and pedestrians from neighborhoods to new under crossings and pedestrian/bicycle overcrossings.
- Where feasible, provide landscape screening along HST right-of-way and at grade separations to reduce visibility of sound walls and HST infrastructure.

Public Art

- Identify locations along the infrastructure for public art that are part of the urban fabric and can be experienced at different scales and speeds of travel.
- Engage community in discussing design, location and integration of public art along soundwalls and retaining walls
- Consider developing interpretative representations of a variety of cultures, local history, and environmental resources.
- Consider implementing prominent way-finding signage and design on bus stop shelters to reinforce neighborhood identity.


Monterey Corridor
Between intersections
Varies
c/l to c/l
60'+/-
UPRR
60'+/-
HST
2'
5'
Sh'dr
11'
Travel
12'
Travel
9'
Median
12'
Travel
11'
Travel
5'
Sh'dr
5'
L'scape
10'
Pathway
6'
L'scape
88'
Monterey Parkway
Looking North


Monterey Corridor
At intersections with left-turn pockets
Varies
c/l to c/l
60'+/-
UPRR
60'+/-
HST
2'
5'
Sh'dr
11'
Travel
12'
Travel
11'
Left Turn
3'
12'
Travel
11'
Travel
5'
Sh'dr
5'
L'scape
11'
Pathway
88'
Monterey Parkway
Looking North

SECTION 6: Coyote Valley

R Existing Viewpoint: Coyote Valley South on US 101 South of Bailey

R Simulation Viewpoint: Coyote Valley South on US 101 South of Bailey

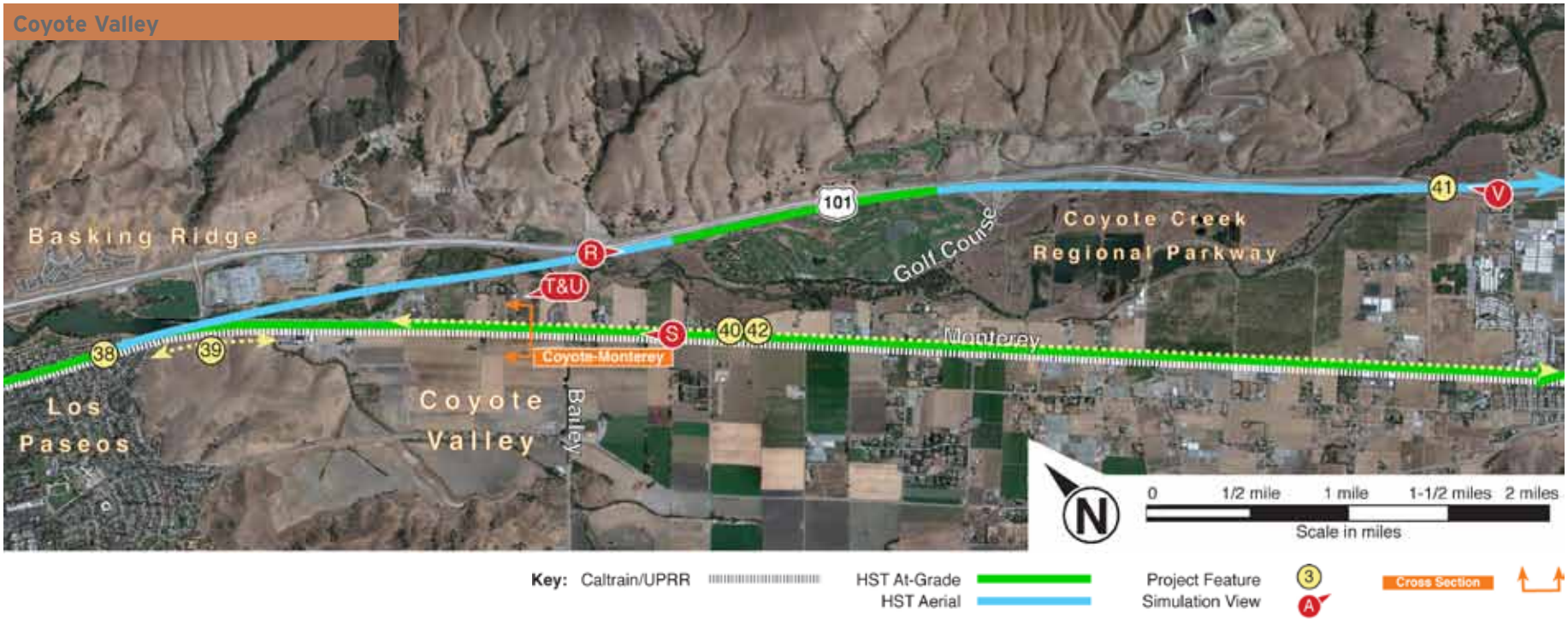
SECTION 5:

4.5.6 Coyote Valley

Existing Context

Section 6 extends 5 miles from Forsum Road, near the Coyote Creek Lakes, to the Morgan Hill city border, near Burnett Avenue. The landscape of Coyote Valley is generally a mix of agriculture and open space. US 101 passes along the base of the hills on the east side of the valley. Monterey Highway bisects the valley's agricultural area, which also includes scattered residential and commercial buildings. At the north end, Tulare Hill marks both the end of San José's urbanized area and the last undeveloped crossing from the Diablo Range to the Santa Cruz Mountains, a prime wildlife corridor. Coyote Creek runs between US 101 and Monterey Highway and is the focus of the Coyote Creek Parkway. This county park stretches from Morgan Hill in the south well into San José in the north. Pockets of development occur south of Tulare Hill: an electrical generating plant and large substation; the small community of Coyote, just south of the power plant; and other instances of commercial and residential buildings along Monterey Highway. Agriculture in the area varies from sod farms to orchards. East of Coyote Creek, The Coyote Creek Golf Club lines both sides of US 101 for about half

Coyote Valley



Proposed Project Features

38 Commence the aerial structure as soon as feasible as the US 101 alignment ascends up from Monterey Highway to minimize the height of retained fill.

39 "Natural" texture/color on retaining walls along Tulare Hill.

40 Provide widened median for Monterey Highway south of Tulare Hill for aesthetics.

41 Employ longer-span girders as feasible to reduce the number of straddle bents necessary to cross US 101 at Coyote Creek.

42 Enhance wildlife crossings along Monterey Highway for both alignment alternatives.

S Existing Viewpoint: Monterey Highway in Coyote Valley

S Simulation Viewpoint: Monterey Highway in Coyote Valley

the distance from the Bailey Avenue interchange to the freeway's crossing of Coyote Creek. From north to south, Coyote Valley is zoned North Coyote Valley Campus Industrial area, mid-Coyote Urban Reserve, and Coyote Greenbelt to the south to Morgan Hill.

Alignment Description

In Section 6 there are two potential HST alignments, diverging near Forsum Road on Monterey Highway. Both alignment alternatives are under consideration in the CHSRA's San José to Merced Draft EIR/EIS.

East of UPRR Alternative. One alignment would continue to follow Monterey Highway and the Caltrain/UPRR tracks (East of UPRR to Downtown Gilroy Alignment Alternative). The HST would run between Monterey Highway and the UPRR. Just north of Tulare Hill, the UPRR would be relocated just to the west of its existing right-of-way as it curves around the slope of Tulare Hill. The limits would be approximately from the southernmost edge of the residential neighborhood on Pegasus Court to the Metcalf Energy Plant. This would allow for the HST to make the same curve without a speed restriction.

Beginning near Emado Avenue, on the south edge of the community of Coyote, Monterey Highway would be relocated about 60 feet to the east to allow placement of the HST between the highway

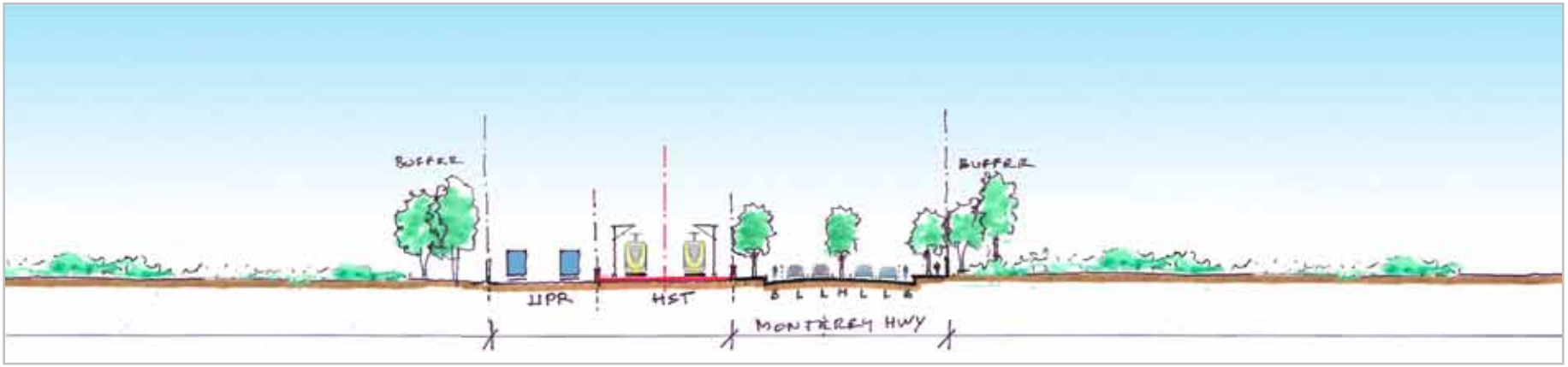
T/U Existing Viewpoint: Coyote Valley Aerial

T Simulation Viewpoint: Coyote Valley Aerial, HST US 101 Alignment Alternative

and the UPRR right-of-way. New grade separations would be built to carry major streets over the HST alignment, the UPRR tracks, and Monterey Highway. This configuration would continue to the Morgan Hill border.

US 101 Alternative. The other alignment alternative follows US 101 (East Gilroy At-Grade Alignment Alternative). It would begin between Monterey Highway and the Caltrain/UPRR tracks, and soon ascends to an aerial alignment and crosses Monterey Highway and Coyote Creek. It would pass over Bailey Road just west of US 101 and descend to run at grade on the west side of the freeway. It would ascend to an aerial structure to cross US 101 and Coyote Creek near the northern city limits of Morgan Hill and continue on aerial structures to the Morgan Hill border.

U Simulation Viewpoint: Coyote Valley Aerial, HST Monterey Highway/UPRR Alignment Alt.



Cross Section: Section 6, Coyote Creek-Monterey Highway

Design Objectives

- Construct HST infrastructure and viaducts to complement the scenic, historic and cultural character of Coyote Valley.
- Showcase views from HST to rural valley as gateway to the Silicon Valley and Bay Area.
- Minimize the effect of HST dominating any views of open space in established viewsheds.
- Consider rural and agricultural motifs for the landscaping of Monterey Highway and grade separations.

US 101 Alternative

- Minimize visual and physical intrusion of HST into parks, riparian habitats and wildlife corridors.
- Design the viaduct crossing U.S. 101 so that it does not compete with I-280 long span bridge or Diridon Station design.

East of UPRR Alternative

- For the Monterey Highway alternative, enhance wildlife crossings of Monterey Highway where impacted by the HST alignment.

Desired Outcomes

- The selected alignment alternative and project improvements preserve and complement Coyote Valley's scenic, cultural and historic assets.
- The landscape character for new plantings and wildlife crossings are consistent with the visual character of the Coyote Valley.
- Street trees replace the removed Keesling trees with the east of UPRR alternative.

V Existing Viewpoint: Coyote Valley 101 North at Coyote Creek

V Simulation Viewpoint: Coyote Valley 101 North at Coyote Creek

Design Guidelines

Us 101 Alternative

HST Infrastructure

- Consider the use of longer-span column spacing for aerial structures in places where shorter-span column spacing may block expansive views for passing motorists.
- Maintain views to surrounding hills along US 101 south of Bailey Avenue.
- Use architectural features to soften the appearance of straddle bents.

Retaining Walls

- Minimize the use of retaining walls by adapting new grading to blend with existing slope grades.
- Use "natural" textures and colors for any retaining walls at Tulare Hill to conform to existing rock forms.

Fencing

- Security fencing for HST shall be a "natural" color.

Cinema San Pedro

Landscape

- Landscaping shall use natural forms and native plant palettes.
- Implement landscape screening along the right-of-way that reduces the visibility of aerial structures but does not obstruct views to surrounding hills.
- Where biological studies identify animal crossings of the HST alignment (for either US 101 and Monterey Highway alternatives), use appropriate methods to enhance wildlife crossings such as, but not limited to: appropriate fencing, minimal lighting, native vegetation cover, noise and vibration abatement, protection of adjoining habitats and tools to reduce human-wildlife interactions. Improve existing wildlife crossing structures such as culverts, overpasses and underpasses where impacted by the alignment, per the mitigations identified by biologists in the EIR/S.

Public Art

- Public art in this section of the HST should focus on enhancing environmental and landscape aspects of the site.

East of UPRR Alternative

Street Crossings

- New overcrossings in Coyote Valley should include sufficient width for pedestrians and cyclists.

Lick Observatory

Landscape

- Landscape and wildlife crossings same as US 101 as noted above.
- Formal landscaping along the Monterey Highway HST alignment should be limited to designs that draw on agricultural forms, such as orchards.
- Landscape the median of the relocated Monterey Highway with flora conducive to sheltering creatures crossing the highway, and landscape the wildlife crossing structures with flora conducive to making those structures most effective.

Fencing

- Soften appearance of security fencing along HST adjacent to Monterey Highway through appropriate colors, fence design and introduction of vines and landscaping to fencing.
- Security fencing same as US 101 as noted above.

Lighting

- Provide minimal lighting along Monterey Highway.

Public Art

- Public art in this section of the HST should focus on enhancing environmental and landscape aspects of the site.

Communications Hill Residential Neighborhood

5.0 ROLES AND RESPONSIBILITIES

Section 5 identifies the roles and responsibilities[1] of the CHSRA and the City of San Jose regarding implementation, project design, aesthetic design review, capital and maintenance costs, air rights and public art.

IMPLEMENTATION

The CHSRA and City will work collaboratively to implement the Guidelines, including:

- Efficient project delivery and issues resolution to advance CHSRA's Design/Build process.
- Collaboration with design and design review per the roles and responsibilities established in this section.
- Joint public outreach with the San Jose community.

Environmental Process

The CHSRA will integrate the Guidelines into the project EIR/EIS for the San Jose to Merced Project Section (and San Francisco to San Jose Project Section) for certification by the CHSRA Board and Federal Rail Road Administration.

The CHSRA can incorporate the Guidelines into the environmental documents in any of the following ways: update preliminary engineering drawings; revise the project description; incorporate as project mitigations and/or incorporate by reference.

Guidelines Approval

The Guidelines will be presented to the City Council for approval and the CHSRA Board for approval prior to CHSRA certification of the Final Project EIR/EIS for the San Jose to Merced project section.

[1] Although a lead agency (i.e. City or CHSRA) cannot delegate its authority for final approvals to another entity, the Roles and Responsibilities are intended to protect the interest of each stakeholder and to ensure agreements defined within the Guidelines are honored.

Design Build Process

The CHSRA proposes Design Build (DB) as the project delivery method. The Guidelines shall be implemented as part of the DB process. The DB process offers advantages over the traditional design/bid/build process through DB contract efficiency with a single contractor managing design and construction. DB has greater cost certainty, scheduling efficiency, opportunities for technical innovation and reduced project risk.

Design Build Roles

The CHSRA's role is to procure and oversee the management of the DB contract to ensure that the project's schedule, cost and quality goals are met. The DB process selects a single DB contractor with responsibility and control over management, design and construction as integrated services. The CHSRA proposes use of a Master Agreement to define the DB process and the roles of the DB contractor, the CHSRA and the City.

PROJECT DESIGN

The CHSRA and City shall have design responsibility as follows:

DESIGN ROLES AND RESPONSIBILITIES

PROJECT COMPONENT	CHSRA	CITY
DIRIDON STATION	Lead agency for HST station facilities and operations	Lead agency for Diridon Station Area Plan
	Diridon Station is a shared facility, requiring multiple agency coordination roles and responsibilities are to be defined. The City intends to have a future Joint Powers Authority responsible for managing design and operations of an integrated, multi-modal transit facility.	
HST INFRASTRUCTURE	Lead Agency	Review and comment
MONTEREY HIGHWAY	CHSRA is lead Agency designing to City standards with City as owner of facilities.	
STREET CROSSINGS, PEDESTRIAN AND BICYCLE FACILITIES		
PUBLIC ART	CHSRA and City are to collaborate on the location and integration of public art into the station and non-station areas within the CHSRA right-of-way, with the City as lead agency on the design and selection of public art, consistent with CHSRA public art policy.	

AESTHETIC DESIGN REVIEW

The CHSRA and the City shall develop a mutually agreed upon schedule for design review.

Aesthetic Design Concept Plans

The CHSRA shall prepare Design Concept Plans for HST facilities in San Jose consistent with the Guidelines. The Design Concept Plans shall be the basis for detailed engineering and construction of the HST system in San Jose. Design Concept Plans are generally regarded in the industry as 30 percent engineering drawings and are uniquely prepared to guide the "design/build" contracting process.

Concept Plan Design Review

The CHSRA shall work with City staff to develop concept plans and identify solutions consistent with the Guidelines. Design Concept Plans shall be presented to the CWG or similar community interest group to receive their feedback regarding consistency with the Guidelines. Design Concept Plans shall be presented to the City Council and CHSRA Chief Executive Officer for their approval.

Final Engineering Design Review

The CHSRA agrees that final engineering design and construction documents shall/ are intended to be consistent with the approved Design Concept Plans. CHSRA staff shall provide City staff an opportunity to review final design and construction documents to verify consistency with the approved Design Concept Plans.

City Approval of Design Changes

The CHSRA will consult with the City before approving changes or modifications during construction that alters aesthetic or visual elements of the approved Guidelines and final engineering design for the project. Any changes affecting the visual design of the project that has been approved by the City Council must be reviewed by the City for consistency with approved Design Concept Plans. Where there is a difference in opinion, the City and CHSRA shall seek to achieve consensus on mutually acceptable solutions or consult the Aesthetic Design Review Panel.

Aesthetic Design Review Panel

The CHSRA and the City agree to form an Aesthetic Design Review Panel (ADRP). The role of the ADRP is aesthetic design advisor and arbitrator for issues resolution.

The ADRP shall consist of (1) one person designated by the City with relevant experience, (2) one person designated by the CHSRA CEO with appropriate experience and (3) one person designated by both the CHSRA and City Mayor from a candidate list compiled jointly by the CHSRA and City representatives on the panel.

The CHSRA and City may consult with the ADRP on matters such as:

- Design Concept Plans. Identify an appropriate set of Design Concept Plans that are reasonable and consistent with the Guidelines. Identify solutions consistent with the Guidelines and CHSRA and City objectives. Recommend how to structure timing and scope of design review to advance the CHSRA design/build process and support City aesthetic design goals.
- Final Engineering Plans. Determine consistency and resolve issues between Design Concept Plans and Final Engineering Plans.
- Design Changes. Determine consistency and resolve issues with design changes during construction with approved Design Concept Plans.

ADRP shall provide appropriate and reasonable recommendations to resolve outstanding issues. The CHSRA and City agree to accept ADRP recommendations, unless the CHSRA and City subsequently, by mutual agreement, modify the approved documents. Recommendations from the ADRP are to be in writing, submitted to both the CHSRA and the City.

Community Working Group

The CWG shall be available to provide aesthetic design review of the Design Concept Plans for consistency with the Guidelines, and respond to requests for input as needed and by the CHSRA and City staff.

Community Outreach

The CHSRA and City shall jointly conduct community outreach as identified in the Guidelines. The City and CHSRA agree to segregate community outreach processes in order to allow greater community input on City facilities while not delaying the CHSRA to move forward with the design build process for HST infrastructure.

CAPITAL AND MAINTENANCE COSTS

Capital costs, ownership, maintenance costs and maintenance responsibilities for the completed project are per the table on the right.

Capital Costs

In general, the CHSRA pays for:

- The capital costs of the project
- Project mitigations
- Proportional share of mitigations for capacity improvements
- Acquisition costs for right-of-way

CAPITAL AND MAINTENANCE COSTS AND RESPONSIBILITIES

	CHSRA		CITY	
CATEGORY	CAPITAL COST	OWNERSHIP, MAINTENANCE COST & RESPONSIBILITY	CAPITAL COST	OWNERSHIP, MAINTENANCE COST & RESPONSIBILITY
STRUCTURES	100% All structures comprising CHSRA facilities, including bridges[2], trenches, retaining walls, sound walls and barriers.	100%	0%	0%
HST STATION	100% Functional station design.	100% Functional station design.	100% May consider iconic station elements, in fair share cost arrangement with other parties. TBD	0% Iconic station elements, in fair share cost arrangement with other parties.
GRADE SEPARATIONS AND ROADWAYS	100% All project roadways (e.g., Monterey Highway) grade separations, retaining walls, pavement, bike lanes, curbs, sidewalks and guardrails.	100% To include grade separation substructure and super structures, railway approaches, tracks, railway drainage, overhead catenary system and communications.	0% Or fair share proportion of any modification not required as part of the project.	100% Roadways, roadway approaches and grade separation retaining walls, pavement, bike lanes, curbs, sidewalks and guardrails.

[2] Design/build contractors are encouraged to propose innovative alternative "signature" structural concepts for the I-280 crossing that are competitive in cost and aesthetics to the long span haunched girder bridge as shown in the Guidelines.

CAPITAL AND MAINTENANCE COSTS AND RESPONSIBILITIES, CONTINUED

	CHSRA		CITY	
CATEGORY	CAPITAL COST	OWNERSHIP, MAINTENANCE COST & RESPONSIBILITY	CAPITAL COST	OWNERSHIP, MAINTENANCE COST & RESPONSIBILITY
PEDESTRIAN AND BICYCLE FACILITIES	100% Restoring impacted existing pedestrian and bicycle facilities and new facilities as project mitigation.	0%	0%	100% Pedestrian and bicycle paving, markings, signage and landscaping.
LANDSCAPE	100% All project landscaping, irrigation and hardscape.	100% For landscape in CHSRA right-of-way and up to the first three years until landscaping is established in City right-of-way.	0%	100% After landscape is established in City right-of-way and outside CHSRA operating envelope, including irrigation, planting and hardscape.
LIGHTING	100% All functional and safety lighting for CHSRA facilities and vehicle, pedestrian and bicycle lighting in accordance with City lighting standards.	100% All functional and safety lighting mounted on CHSRA facilities and within the right-of-way.	0%	100% Streetlights in City right-of-way, bollard and pedestrian lighting in Diridon Station area, pedestrian and bicycle lighting under aerial viaducts.
SOUND WALLS	100% All project sound walls.	100% All sound walls on CHSRA property, facilities and station areas.	0%	100% All sound walls in City right-of-way.

CAPITAL AND MAINTENANCE COSTS AND RESPONSIBILITIES, CONTINUED

	CHSRA		CITY	
CATEGORY	CAPITAL COST	OWNERSHIP, MAINTENANCE COST & RESPONSIBILITY	CAPITAL COST	OWNERSHIP, MAINTENANCE COST & RESPONSIBILITY
FACILITIES UNDER AERIAL STRUCTURES	100% All facilities owned and operated by the CHSRA.	100% All facilities owned and operated by the CHSRA.	100% All facilities programmed for public use not related to HST operation access. Facilities privately developed and operated to be maintained per contract terms with the CHSRA and City.	100% Publicly or privately developed uses.
PUBLIC ART	At HST station, pay for cost to integrate public art into station with cost for public art to be funded by City and station area development. At non-station areas pay 100% cost for public art provided as mitigation of visual impacts per budget established by CHSRA.	0%	At HST station, City pays fair share cost with others as part of value capture program with station area development. At non-station areas City to pay for public art for costs in excess of what is required for mitigation of visual impacts.	100% All public art designed and constructed through the City's Office of Cultural Affairs public art program, including art attached to HST infrastructure.
FENCING	100% All project fencing.	100% All fencing, barriers, gates and screening within Diridon Station and in CHSRA right-of-way that protects public spaces and public access from the HST operating envelope.	0%	100% Fencing in the City right-of-way not owned by others.

CAPITAL AND MAINTENANCE COSTS AND RESPONSIBILITIES, CONTINUED

	CHSRA		CITY	
CATEGORY	CAPITAL COST	OWNERSHIP, MAINTENANCE COST & RESPONSIBILITY	CAPITAL COST	OWNERSHIP, MAINTENANCE COST & RESPONSIBILITY
SIGNS	100% All CHSRA signs, signs and pavement markings for grade separations.	100% All signs located in CHSRA right-of-way except for signage and other facilities maintained by others through encroachment agreements.	0% Or proportion for signage by city or others through encroachment agreements.	100% All signs, pavement and curb markings, striping legends, arrows and raised pavement markers within public right-of-way.
UTILITIES	100% CHSRA electrification and operations systems and utility relocation as part of project.	100% CHSRA owned utilities, electrification and operations systems.	0% Or fair share proportion of any expansion of capacity above existing.	100% City owned storm-drain, sanitary sewer, water and electrical systems. Maintenance and repair for utilities located under CHSRA right-of-way to be coordinated with CHSRA.
ELECTRICAL	100% All project electrical equipment and connections to PGE facilities.	100% Electrical equipment from CHSRA facilities to PGE.	0% Or fair share proportion of any expansion of capacity above existing.	100% Electrical equipment from City facilities (street lights traffic signals, city irrigation controls) to PGE
CALTRAIN AND UPRR FACILITIES	Per CHSRA/ Caltrain/UPRR agreement	Maintenance responsibilities of CHSRA, per Caltrain and UPRR agreements for construction and facility operations.	0%	0%

Ownership, Maintenance Costs and Maintenance Responsibilities

In general, the responsibility and cost for maintaining a facility belongs to the party owning the facility. There are instances where one party will provide maintenance on behalf of the other party, where the activity would result in a more efficient use of resources, or when the work falls within the performing party's typical maintenance activities. Such costs are to be reimbursed per mutual agreement.

Maintenance Assumptions

- A design/build contractor under contract to the CHSRA will construct the project. During construction, the contractors will be responsible for maintaining all facilities within the project limits consistent with their contract responsibilities.
- Upon acceptance by the CHSRA and the City of the work completed under these contracts the CHSRA will have custody and control of all CHSR owned facilities and the City will have custody and control of all City owned facilities.
- CHSRA will maintain property acquired for right-of-way prior to and during construction of the project to a standard acceptable to the City (to be determined).
- Construction activities and ordinary maintenance will be performed in a manner consistent with the Design/Build contract responsibilities so as to limit adversely impact rail operations, traffic, pedestrian or bicycle facilities, and passenger access to HST facilities along the right of way.

USE UNDER AERIAL STRUCTURES

The CHSRA is developing a policy regarding use of airspace below and above HST facilities including developing restrictions related to HST operations, maintenance and security.

The CHSRA and City agree to the concept of locating active uses under aerial structures in urban areas to have safe, secure environments for pedestrians along the CHSRA right-of-way and to minimize the potential for graffiti. Envisioned active uses include outdoor park activities, pedestrian and bicycle trails, surface and structured parking, commercial uses and landscaping.

PUBLIC ART

The CHSRA and the City agree to develop strategies on how the CHSRA and the City can work together to achieve public art objectives described in the Guidelines. The CHSRA is developing a policy regarding public art to be consistent with existing state and federal policies.

APPENDIX

A: Simulation Viewpoint: I-880, looking east

B: Simulation Viewpoint: Hedding, looking east

C: Simulation Viewpoint: The Alameda, toward station

D: Simulation Viewpoint: Santa Clara Street, looking west

E: Simulation Viewpoint: Existing Diridon Station and New Iconic HST Station

F: Simulation Viewpoint: Existing Diridon Station and New Functional HST Station

G: Simulation Viewpoint: Simulation Viewpoint: Bird Avenue, looking west

G: Simulation Viewpoint: Simulation Viewpoint: Bird Avenue, looking west with future development

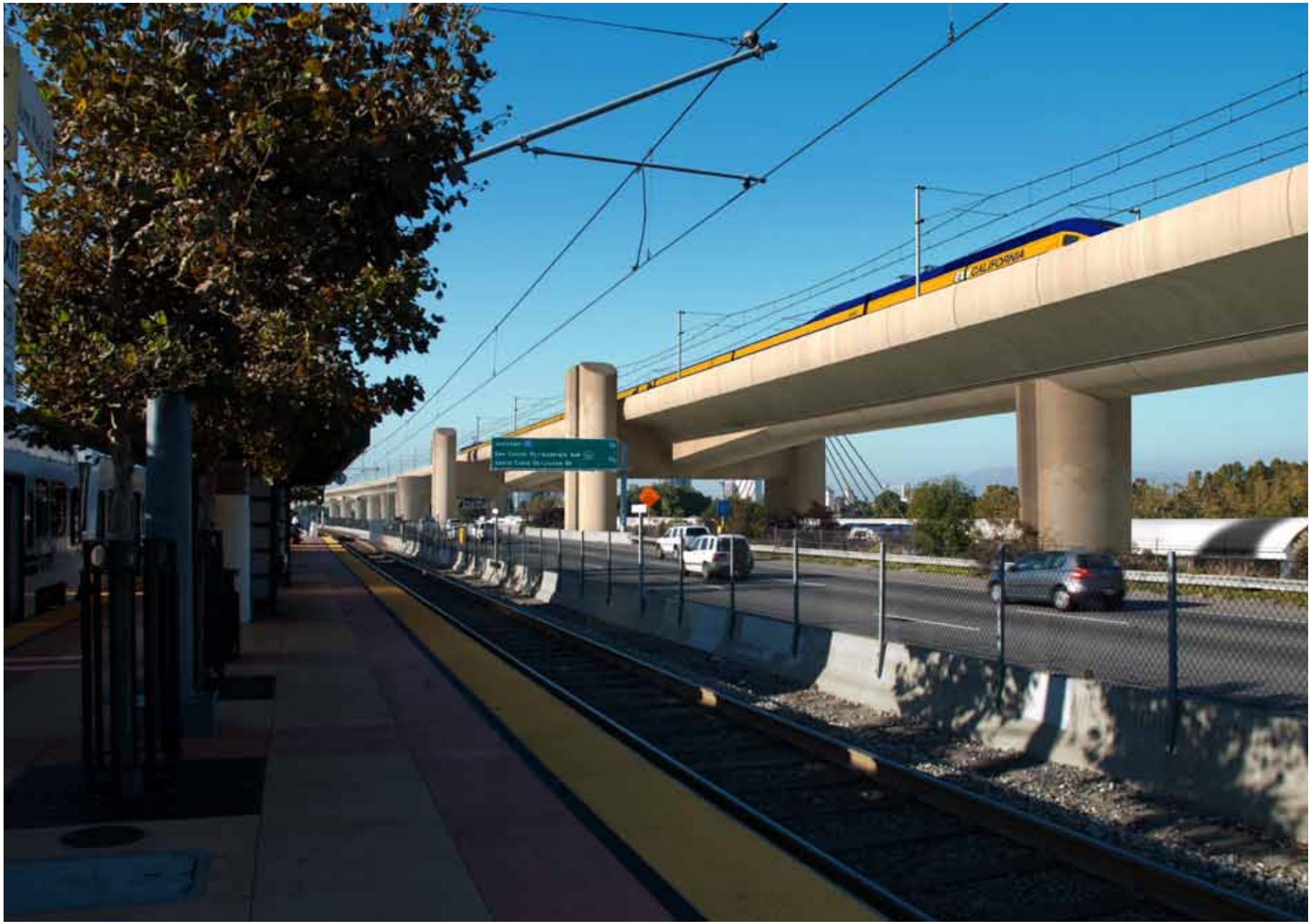
H: Simulation Viewpoint: Bird Avenue, looking north

I: Simulation Viewpoint: Bird Avenue at I-280 ramp, looking east

J: Simulation Viewpoint: Gardner Academy, toward signature bridge

J: Simulation Viewpoint: Gardner Academy, toward functional bridge

K: Simulation Viewpoint: Tamien Station



L: Simulation Viewpoint: Tamien Caltrain Station from VTA Platform

M: Simulation Viewpoint: Alma, looking west

N: Simulation Viewpoint: Communications Hill Cut

0: Simulation Viewpoint: Monterey Highway at Lick Quarry

P: Simulation Viewpoint: Branham Lane at Monterey Highway

Q: Simulation Viewpoint: Monterey Highway near Edenview

R: Simulation Viewpoint: Coyote Valley South on US 101 South of Bailey

S: Simulation Viewpoint: HST along Monterey Highway

T: Simulation Viewpoint: Coyote Valley Aerial, HST US 101 Alignment Alternative

U: Simulation Viewpoint: Coyote Valley Aerial, HST Monterey Highway/UPRR Alignment Alternative

V: Simulation Viewpoint: Coyote Valley 101 North at Coyote Creek

EXPLORATORY DESIGN CONCEPTS FOR DIRIDON HST STATION AND THE SANTA CLARA STREET CROSSING DEVELOPED BY THE CITY OF SAN JOSE

Concept Development

Mayor Chuck Reed, recognizing the importance of good design to shape the Diridon Station area as a world class destination, reviewed the San Jose Visual Design Guidelines and requested staff and city consultants to explore potential iconic design concepts for HST Station and aerial viaduct crossing Santa Clara Street.

The concepts are included in this Appendix for discussion with the City Council, community and CHSRA and to document the City's response to Mayor Reed. These concepts were developed independently by the City and City consultants and have not been reviewed by the Community Working Group members or developed with the support of the CHSRA as part of the Visual Design Guidelines process.


STATION STUDY
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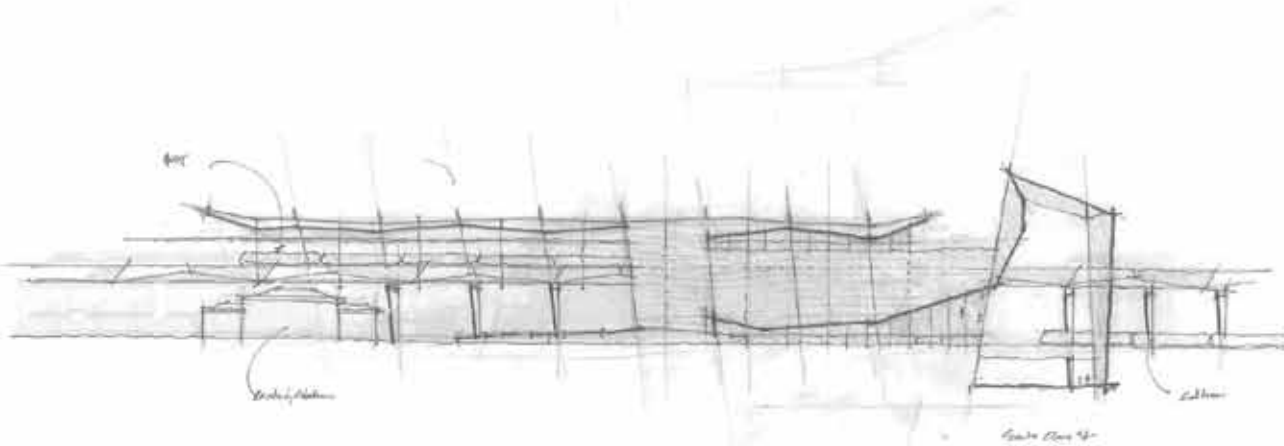

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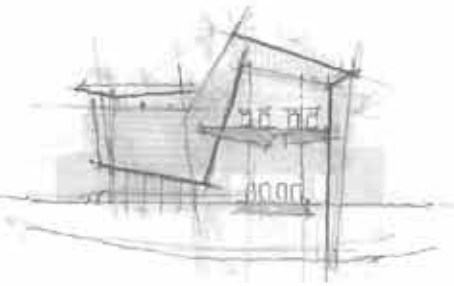

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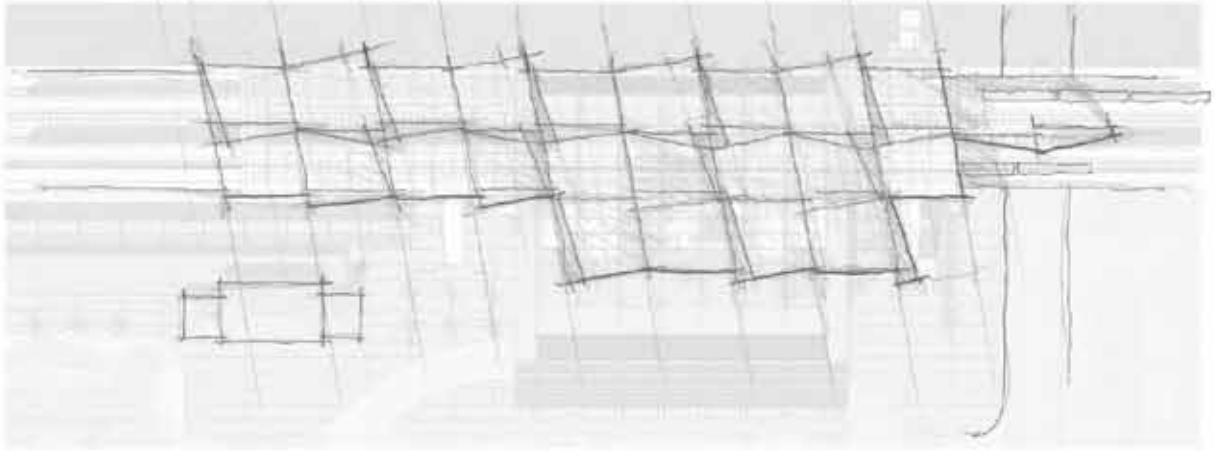

PLAN

STRUCTURAL INSPIRATION

CONCEPT 1 SKETCHES

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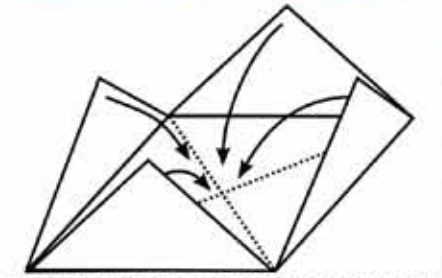

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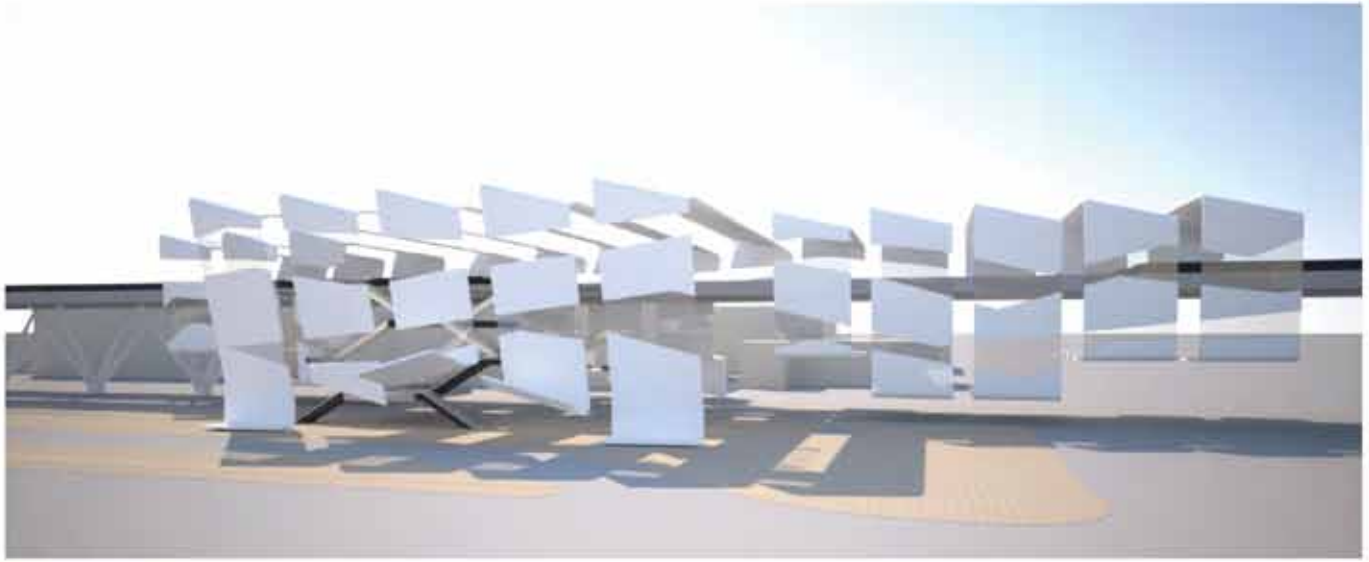

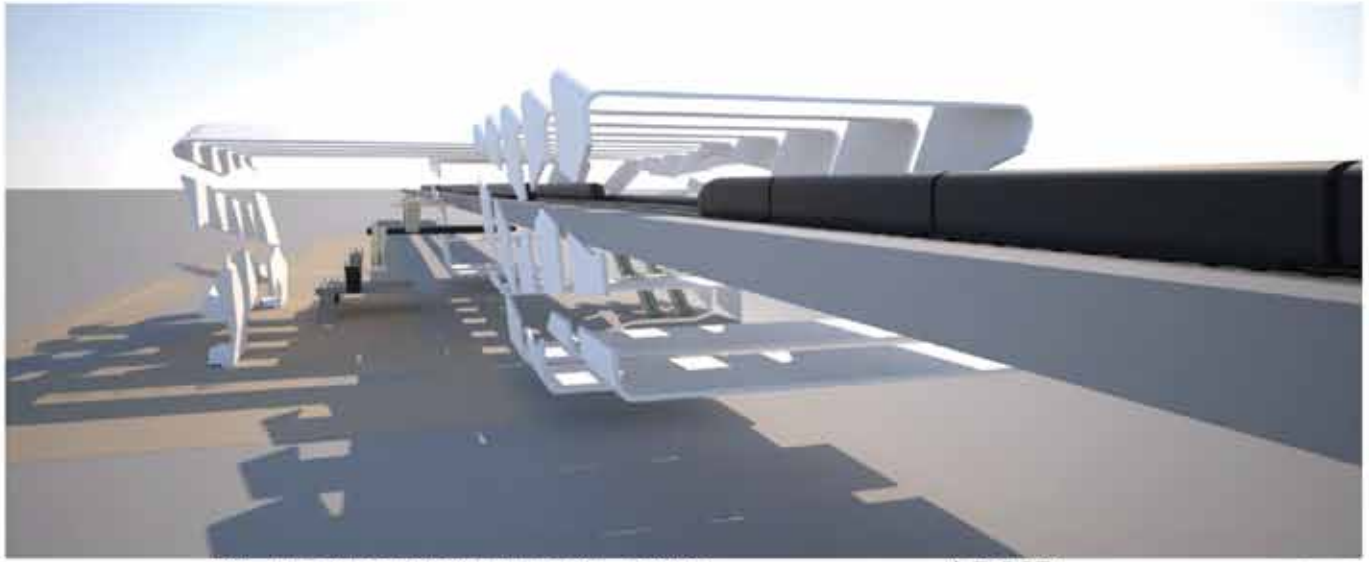

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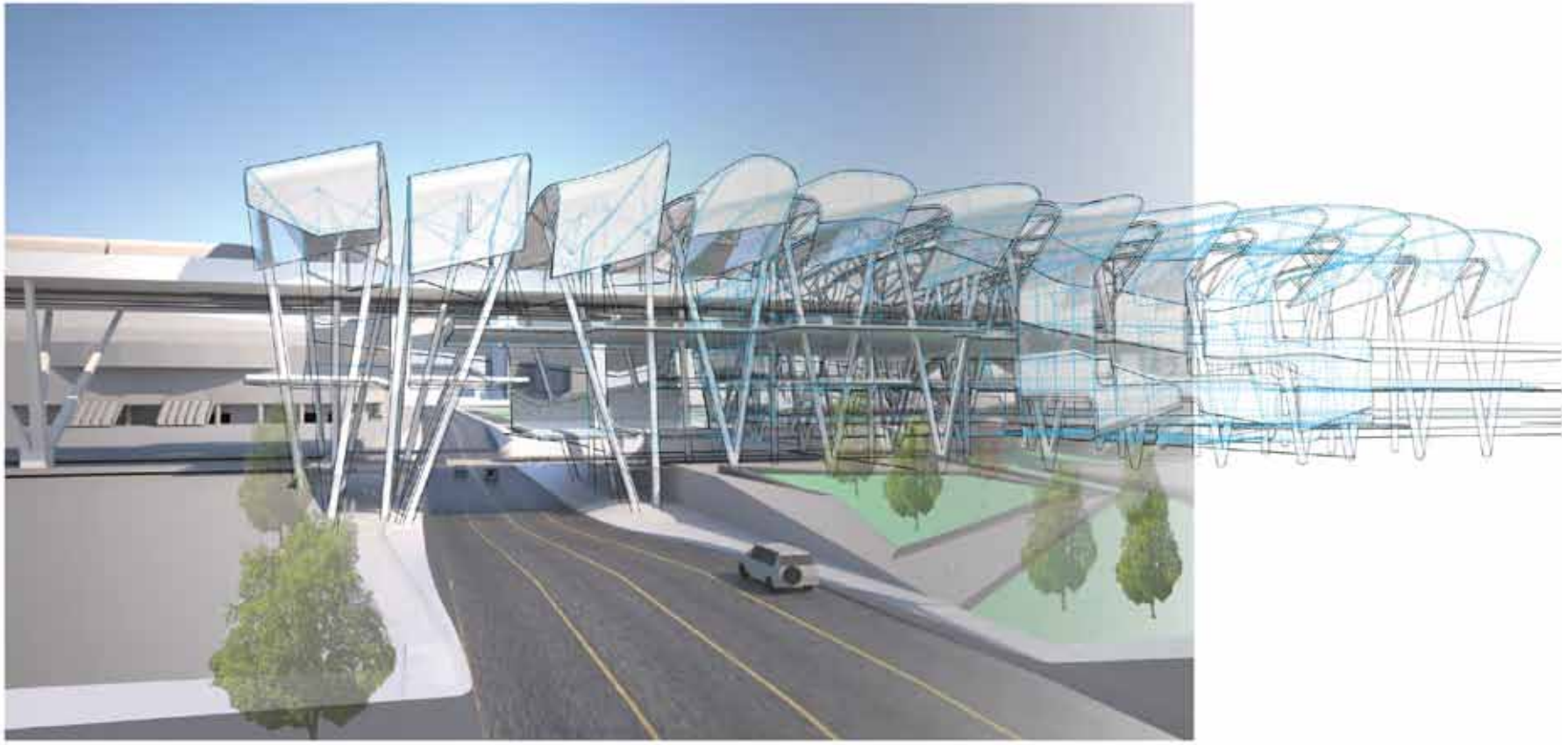

VIEW FROM W. SANTA CLARA STREET CROSSING

CONCEPT 1 PERSPECTIVE VIEW

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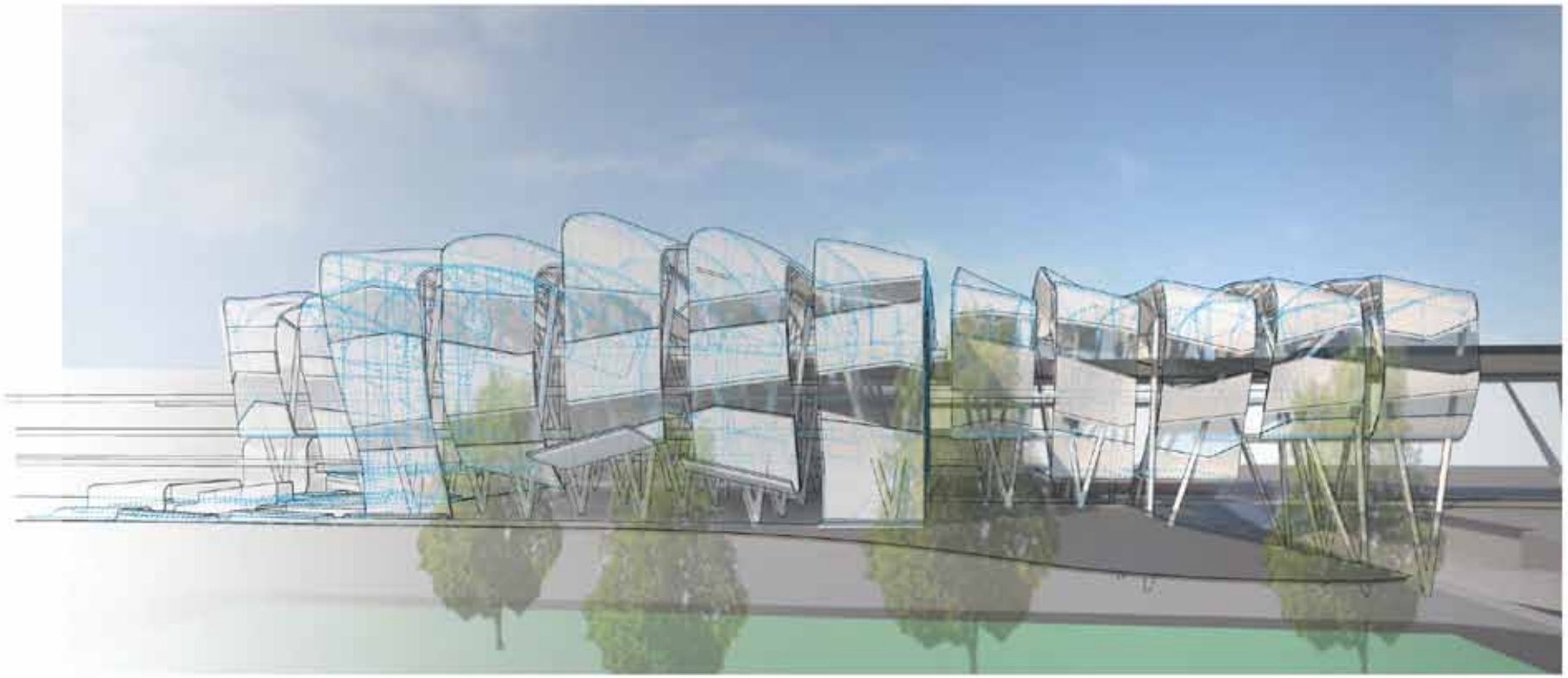

VIEW FROM CAHILL STREET

CONCEPT 1 PERSPECTIVE VIEW

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STATION INTERIOR VIEW

CONCEPT 1 PERSPECTIVE VIEW

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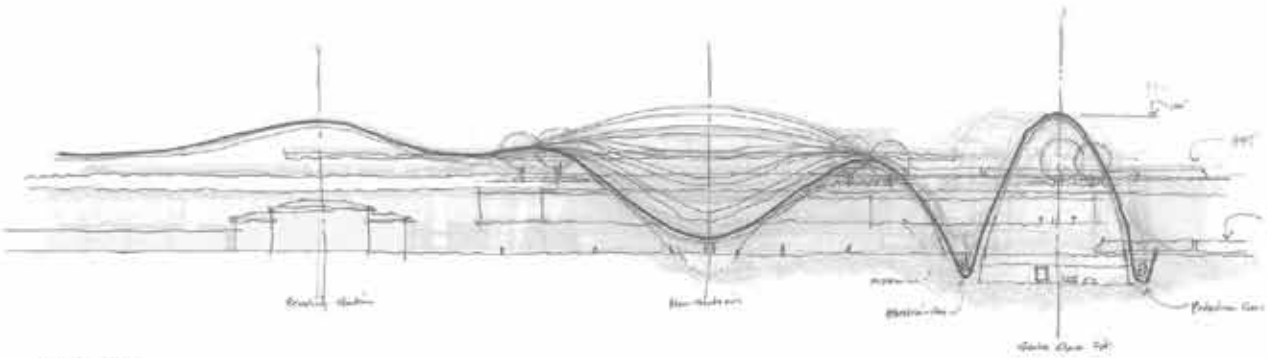

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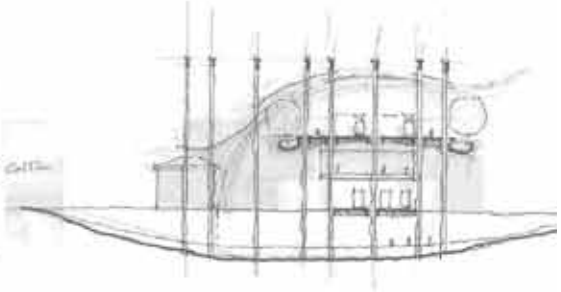

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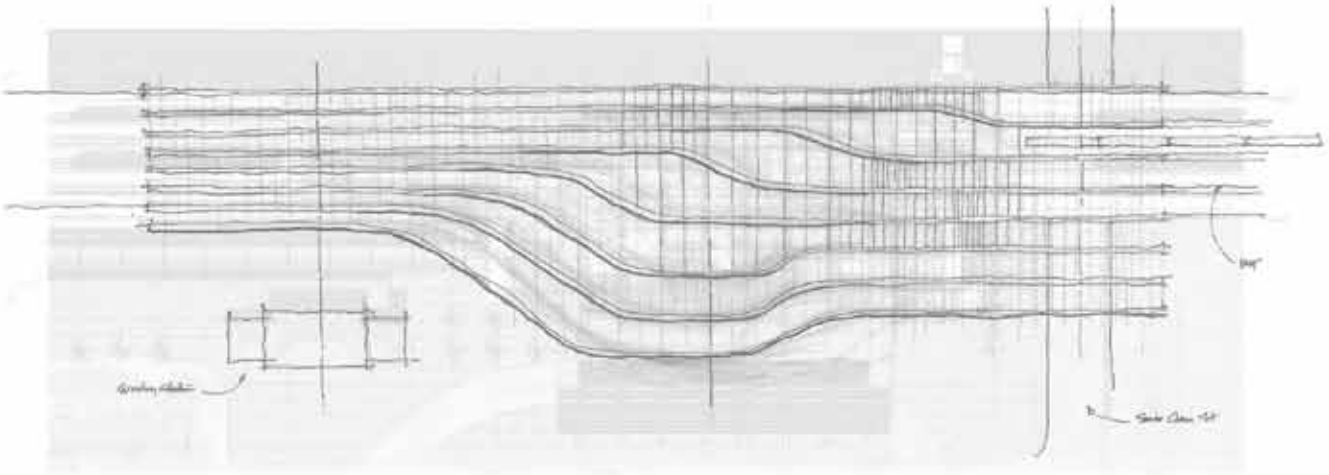

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STRUCTURAL INSPIRATION

CONCEPT 2 SKETCHES

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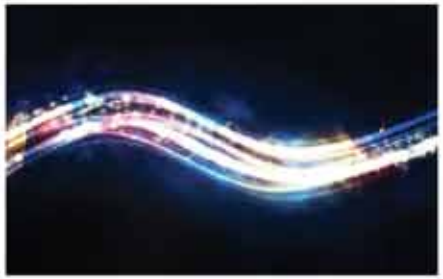

CONCEPT 2 DEVELOPMENT

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VIEW FROM W. SANTA CLARA STREET CROSSING

CONCEPT 2 PERSPECTIVE VIEW

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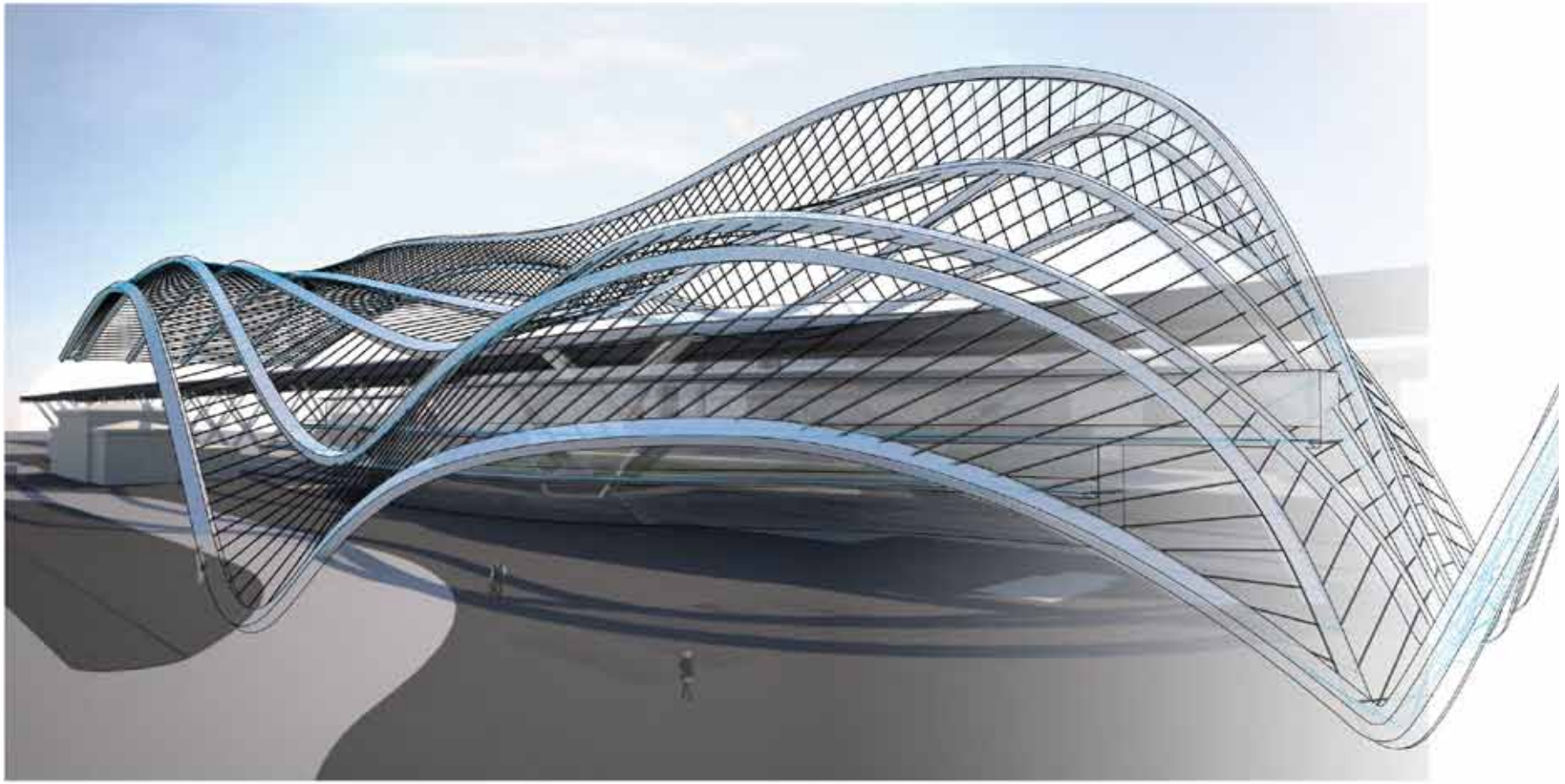

VIEW FROM CAHILL STREET

CONCEPT 2 PERSPECTIVE VIEW

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STATION INTERIOR VIEW

CONCEPT 2 PERSPECTIVE VIEW

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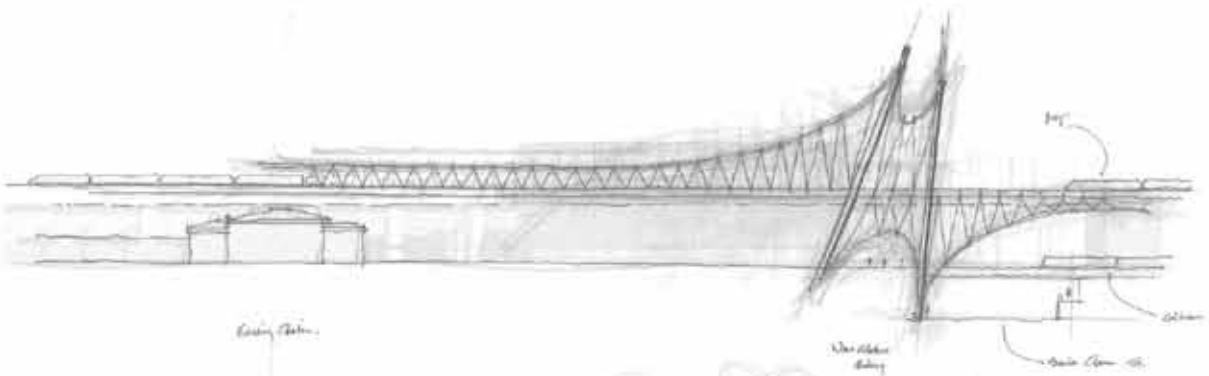

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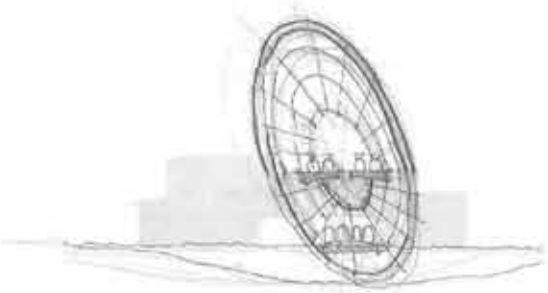

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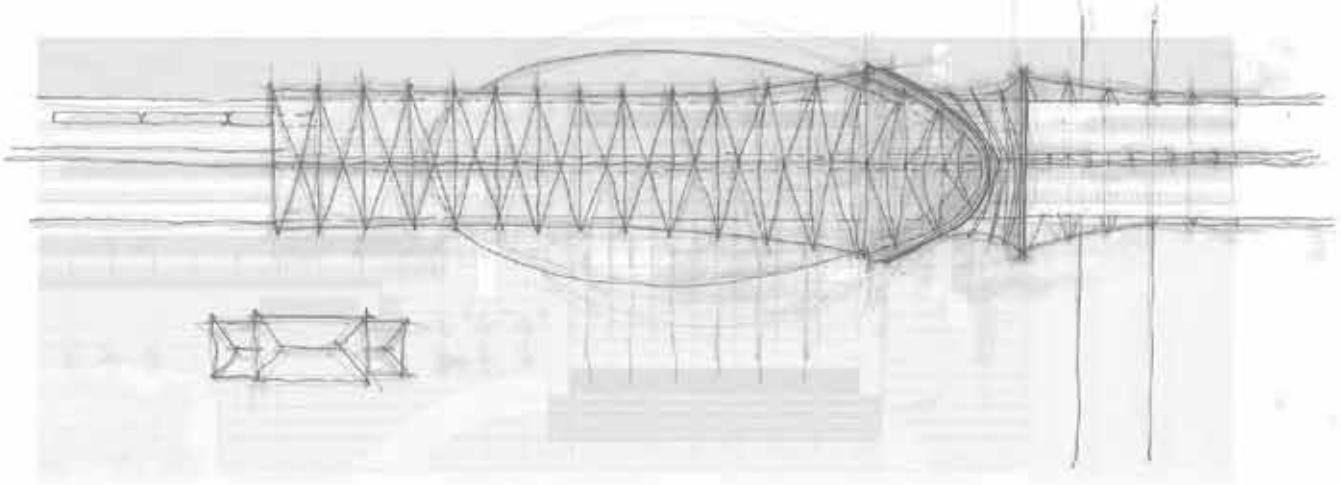

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STRUCTURAL INSPIRATION

CONCEPT 3 SKETCHES

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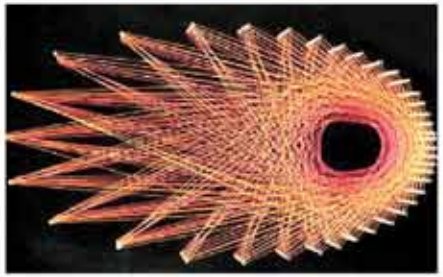

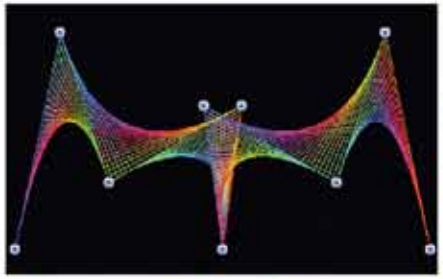

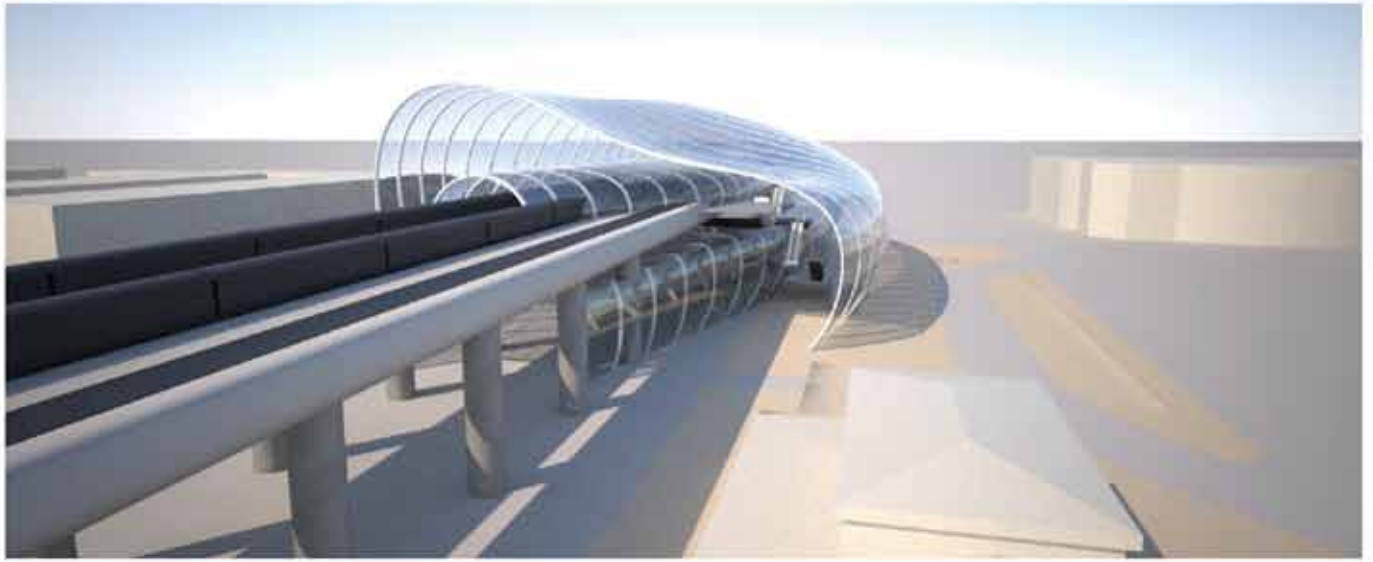

CONCEPT 3 DEVELOPMENT

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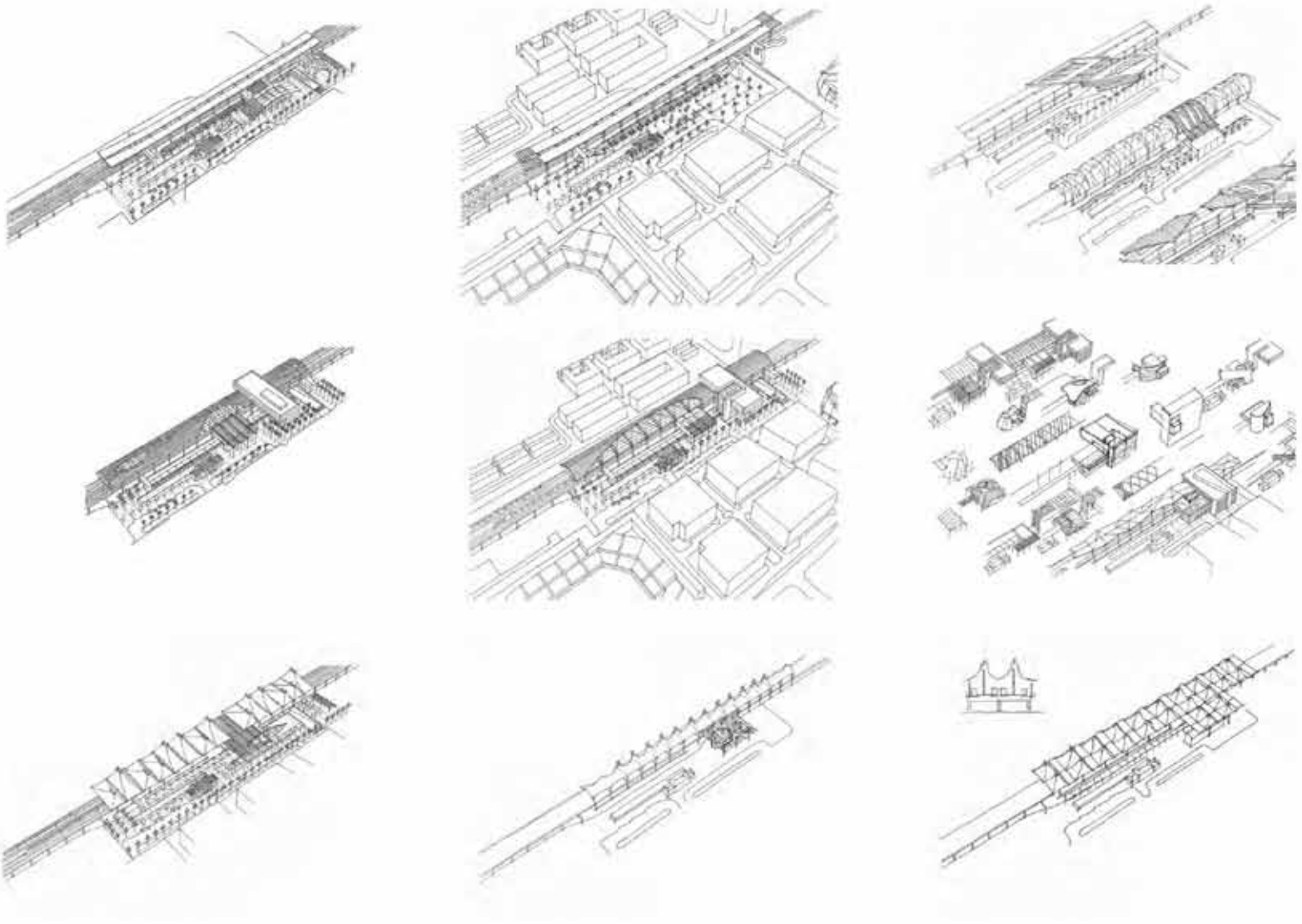

EARLY CONCEPT SKETCHES

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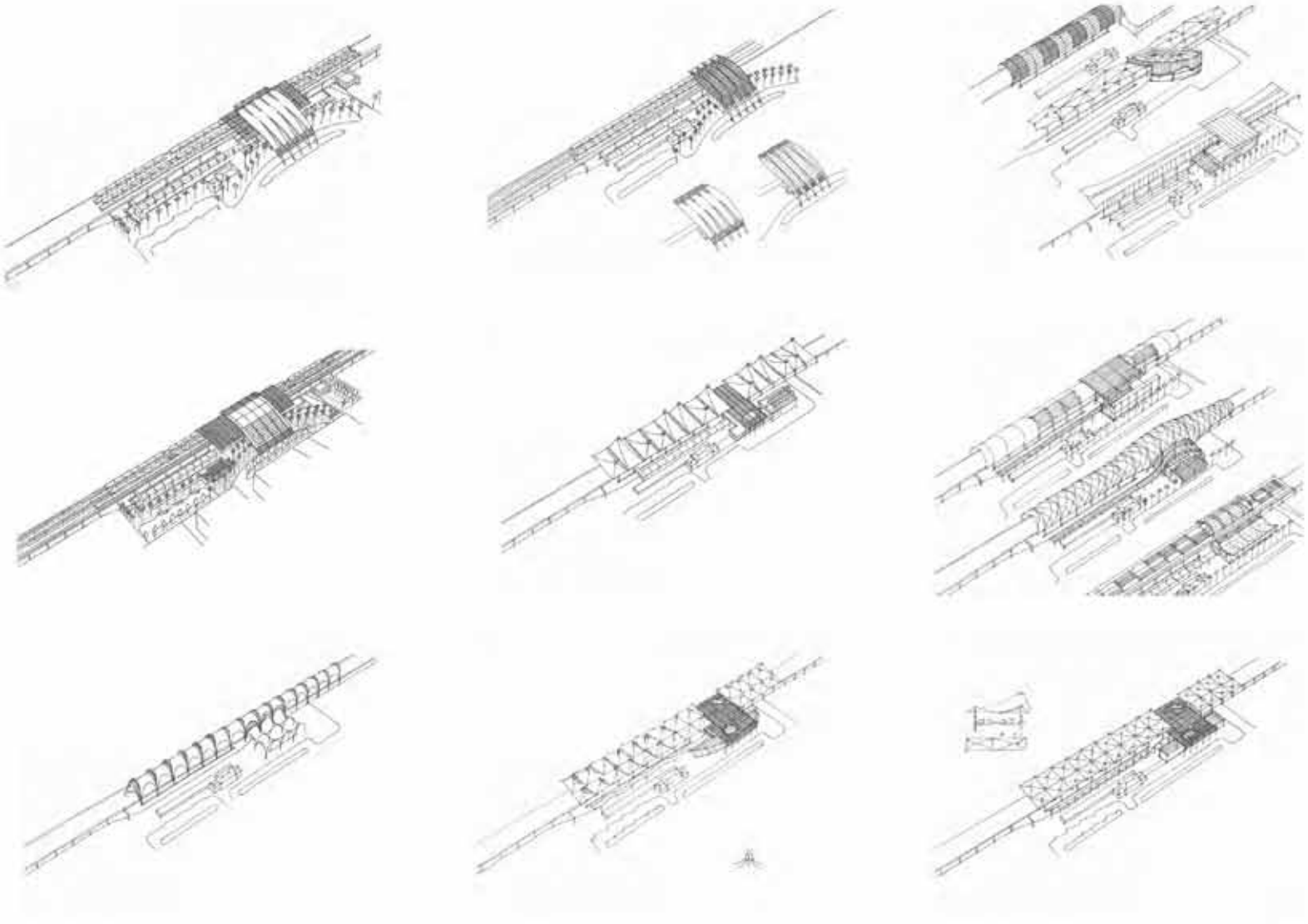

EARLY CONCEPT SKETCHES

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City of San Jose - Department of Transportation and Office of Cultural Affairs

Apex Strategies

ARUP

Architecture 21

Circlepoint

Field Paoli

Fukuji Planning and Design

HNTB

Newlands & Company

Parsons

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